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CLERK, U.S. DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA

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ATTORNEYS FOR PLAINTIFF TRANS VIDEO ELECTRONICS, LTD.  
[Additional Counsel for Plaintiff appears on Signature Page]

**UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA**

TRANS VIDEO ELECTRONICS, LTD.,  
an Indiana Corporation, and

Plaintiff,

v.

XM SATELLITE RADIO HOLDINGS, INC.,  
a Delaware Corporation,

XM SATELLITE RADIO, INC.,  
a Delaware Corporation,

Defendants.

CV

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COMPLAINT FOR PATENT INFRINGEMENT

DEMAND FOR JURY TRIAL

**PLAINTIFF TRANS VIDEO ELECTRONICS, LTD.'s  
COMPLAINT FOR PATENT INFRINGEMENT**

**THE PARTIES**

1. Plaintiff Trans Video Electronics, Ltd. (hereinafter "Trans Video") is a corporation incorporated under the laws of the State of Indiana and has its principal place of business at 4115 Wisconsin Ave., NW, Suite 208, Washington, DC 20016.

2. Upon information and belief, Defendant XM Satellite Radio Holdings, Inc. (“XM Holdings”) is a Delaware corporation with a principal place of business at 1500 Eckington Place, NE Washington, DC 20002. Upon information and belief, Defendant XM Satellite Radio, Inc. (“XM Radio”) is a wholly-owned subsidiary of XM Holdings, and it is a Delaware Corporation with a principal place of business at 1500 Eckington Place, NE Washington, DC 20002. The XM entities, referred to above, are collectively referred to hereinafter as “XM.”

3. Upon information and belief, Defendant XM makes, uses, offers for sale, sells and/or imports into the United States digital satellite radio services and products, including portable integrated receiving systems for use with its satellite communications systems to establish a satellite communications down-link, including related systems and equipment.

## JURISDICTION AND VENUE

4. This action arises under the laws of the United States, more specifically under 35 U.S.C. § 100, *et seq.* Subject matter jurisdiction is proper in this Court pursuant to 28 U.S.C. §§ 1331 and 1338.

5. Upon information and belief, XM transacts business in this judicial district, including the sale and offering for sale of its products, and XM has sufficient contacts with this judicial district to subject itself to the jurisdiction of this Court. Personal jurisdiction and venue are proper in this Court pursuant to 28 U.S.C. §§ 1391 and 1400.

**COUNT 1: INFRINGEMENT OF U.S. PATENT NO. 5,903,621**

6. Trans Video Electronics, Ltd. incorporates by reference the allegations set forth in the preceding paragraphs.

1           7.       On May 11, 1999, United States Patent No. 5,903,621 ("the '621 patent") was duly  
2 and legally issued. A true and correct copy of the '621 patent is attached hereto as Exhibit A.  
3 Trans Video Electronics, Ltd. is the assignee and the owner of all right, title and interest in and to the  
4 '621 patent. The assignment is recorded at reel 6691 and frame 229. The '621 patent is entitled to a  
5 presumption of validity.  
6

7           8.       XM has committed, actively induced and contributed to the infringement of the  
8 '621 patent. XM continues to commit, actively induce and contribute to the infringement of the  
9 '621 patent.  
10

11           9.       Specifically, XM's making, using, offering for sale, selling and/or importing into the  
12 United States of certain of its digital satellite radio products, including portable satellite radio  
13 receiving systems, such as the Xpress series, inno, and Helix receivers and related products, directly  
14 infringe Trans Video's '621 patent. By XM's acts of making, using, offering for sale, selling,  
15 importing, marketing, supporting and advertising said digital satellite radio products and services,  
16 XM is actively inducing the infringement of the '621 patent and contributing to the infringement of  
17 the '621 patent.  
18

19           10.      XM has been, or should have been, on notice of the '621 patent and its infringement,  
20 and has not ceased its infringing activities. XM's infringement of the '621 patent has been and  
21 continues to willful and deliberate.  
22

23           11.      Trans Video has been irreparably harmed by XM's acts of infringement of the  
24 '621 patent, and will continue to be harmed unless and until XM's acts of infringement are enjoined  
25 and restrained by order of this Court.  
26  
27  
28

1           12. As a result of XM's acts of infringement, Trans Video has suffered and will continue  
2 to suffer damages in an amount to be proven at trial.

3  
4                                   **PRAYER FOR RELIEF**

5           WHEREFORE, Trans Video requests this Court enter judgment as follows:

6                   A. That XM has infringed the '621 patent;

7                   B. That such infringement has been willful;

8                   C. That XM accounts for and pays to Trans Video all damages caused by the  
9 infringement of the '621 patent;

10                   D. That Trans Video receive enhanced damages, in the form of treble damages,  
11 pursuant to 35 U.S.C. §284;

12                   E. That this is an exceptional case under 35 U.S.C. §285;

13                   F. That XM pay Trans Video all of Trans Video's reasonable attorneys' fees and  
14 expenses, including for all appeals;

15                   G. That Trans Video be granted pre-judgment and post-judgment interest on the  
16 damages caused to it by reason of XM's infringement of the '621 patent, including pre-judgment and  
17 post-judgment interest on any enhanced damages or attorneys' fees award;

18                   H. That costs be awarded to Trans Video;

19                   I. That XM, its agents, employees, representatives, successors and assigns, and  
20 those acting in privity or in concert with them, be preliminarily and permanently enjoined from  
21 further infringement of the '621 patent; and  
22

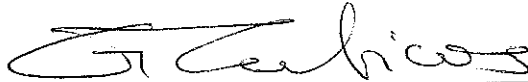
23                   J. That Trans Video be granted such other and further relief as the Court may  
24 deem just and proper under the circumstances.  
25  
26  
27  
28

**DEMAND FOR JURY TRIAL**

Trans Video hereby demand a trial by jury on all issues.

Dated: April 17, 2008

Respectfully submitted,



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US005903621A

**United States Patent** [19][11] **Patent Number:** **5,903,621****Rebec et al.**[45] **Date of Patent:** **\*May 11, 1999**[54] **INTEGRATED COMMUNICATION SYSTEM**

[56]

**References Cited**[75] **Inventors:** **Mohammed S. Rebec; Mihailo V. Rebec**, both of Bristol, Ind.**U.S. PATENT DOCUMENTS**[73] **Assignee:** **Trans Video Electronics, Inc.**, Bristol, Ind.

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[\*] **Notice:** This patent is subject to a terminal disclaimer.[21] **Appl. No.:** **08/979,546****Primary Examiner**—Amanda Le[22] **Filed:** **Nov. 26, 1997****Attorney, Agent, or Firm**—Fleshner & Kim

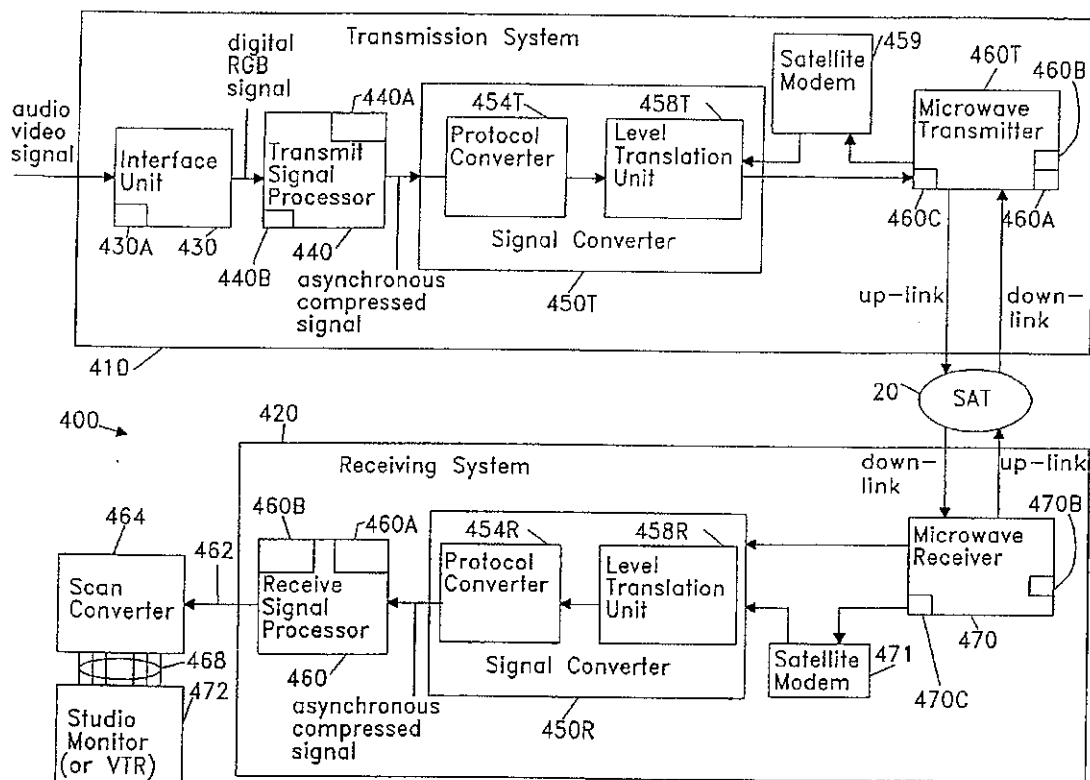
[57]

**ABSTRACT****Related U.S. Application Data**

[63] Continuation of application No. 08/561,168, Nov. 21, 1995, Pat. No. 5,740,214, which is a continuation of application No. 08/047,089, Apr. 16, 1993, abandoned.

[51] **Int. Cl.**<sup>6</sup> ..... **H04H 1/00**[52] **U.S. Cl.** ..... **375/377; 375/220; 375/240; 370/316; 455/3.2; 455/12.1; 455/575**[58] **Field of Search** ..... **375/377, 219, 375/220, 240; 455/3.2, 5.1, 6.3, 11.1, 12.1, 575, 90; 348/384, 385; 370/477, 316**

A transmission and receiving system, includes a transmit interface unit, a transmit signal processing unit, a transmit signal converting unit and a microwave transmitting unit all a first location. The system further includes a microwave receiving unit, a receive signal converting unit and a second signal processing unit. The system can transmit information such as an audio/video signal of broadcast quality or file information via satellite from anywhere in the world to anywhere in the world (except the polar caps) in real time.

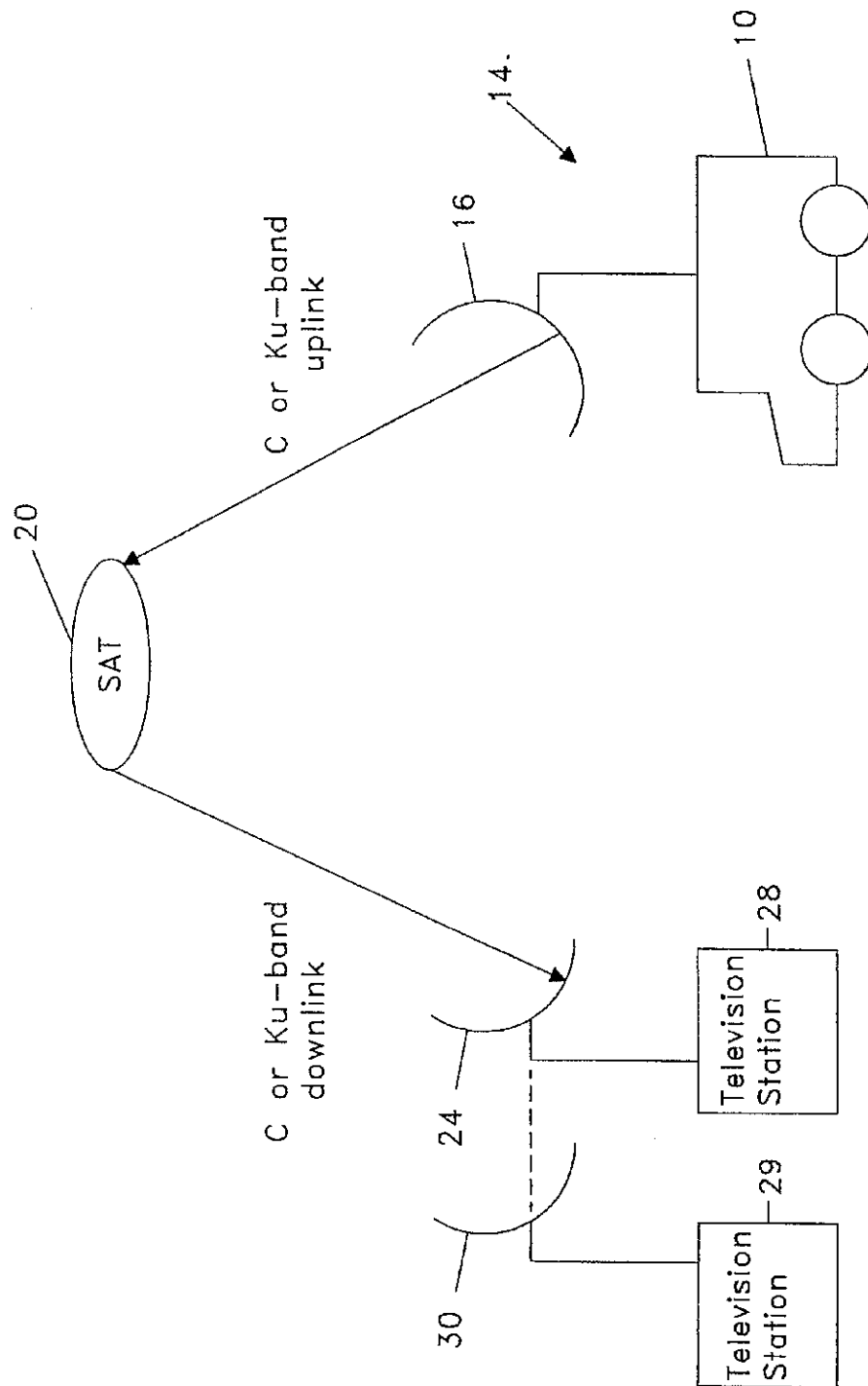
**57 Claims, 17 Drawing Sheets**

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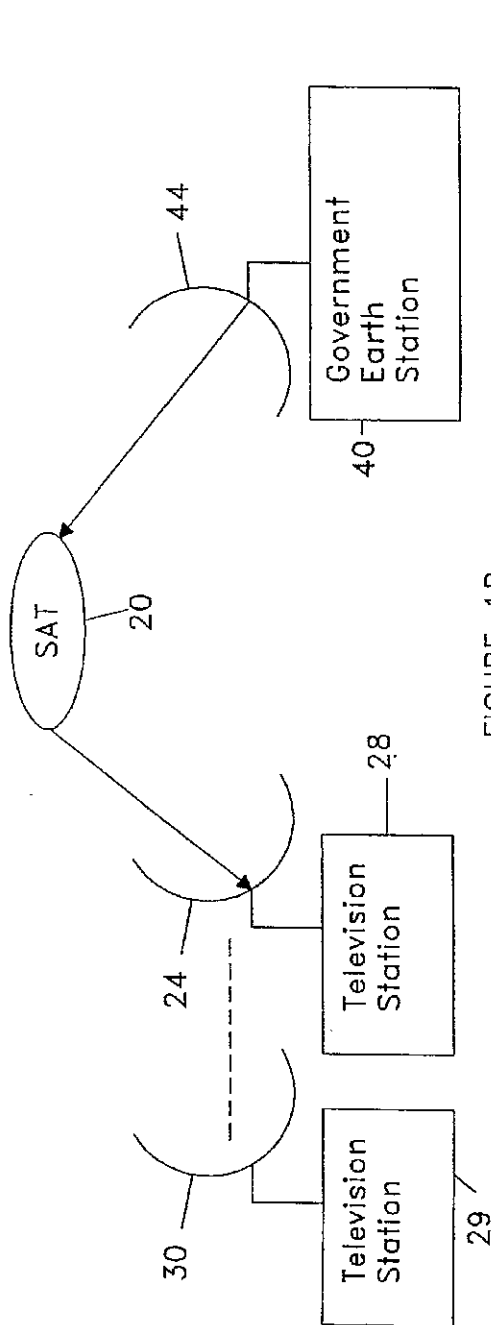


FIGURE 1B

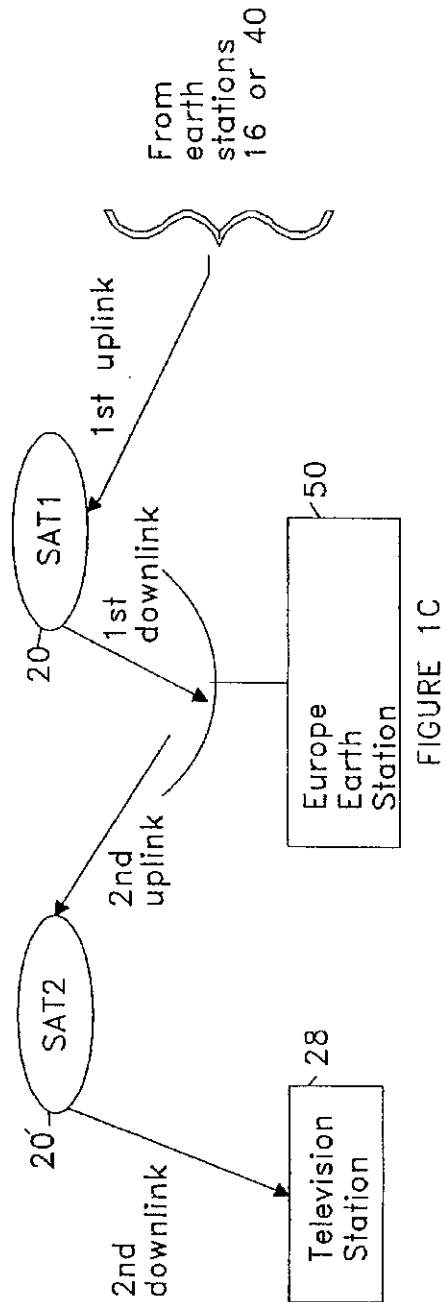


FIGURE 1C

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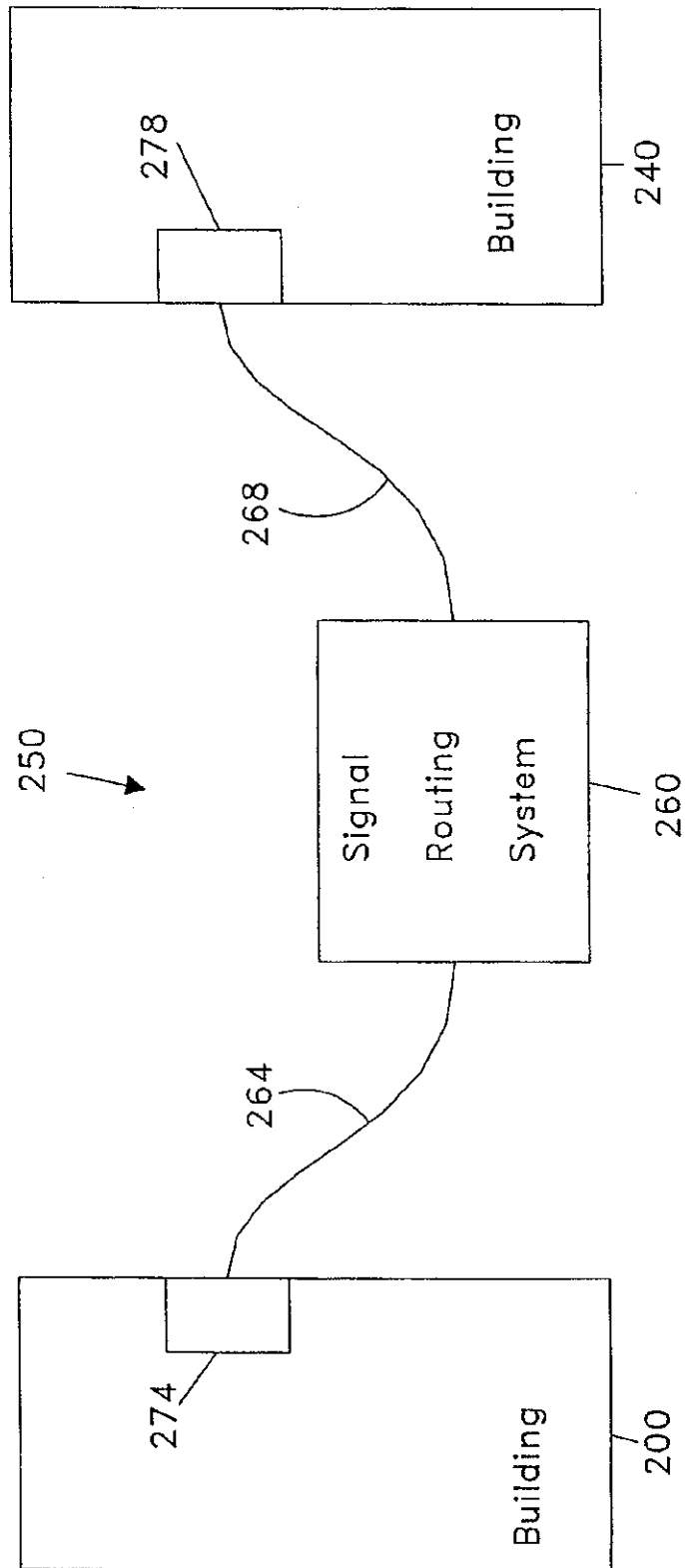


FIGURE 2

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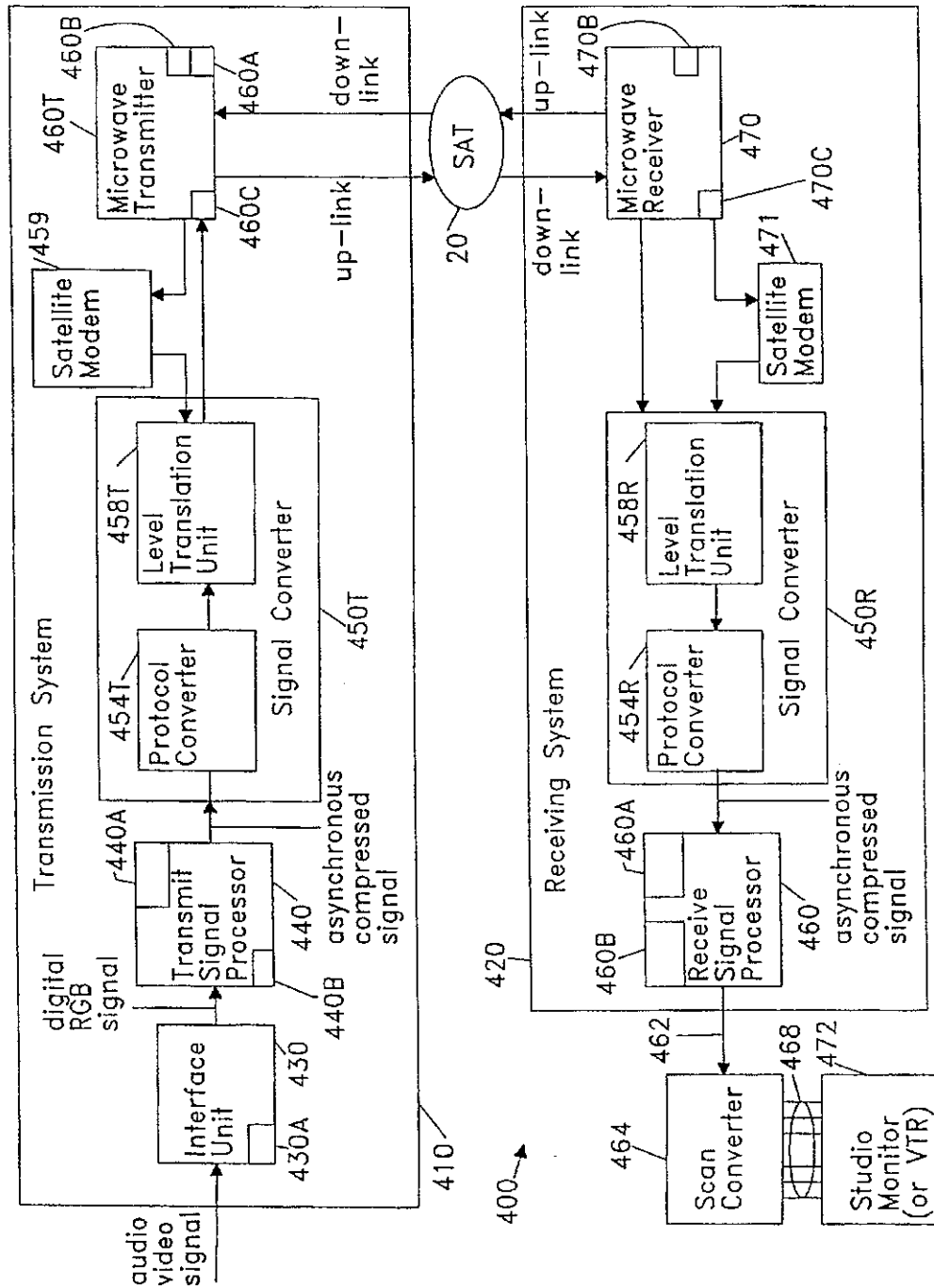


FIGURE 3A

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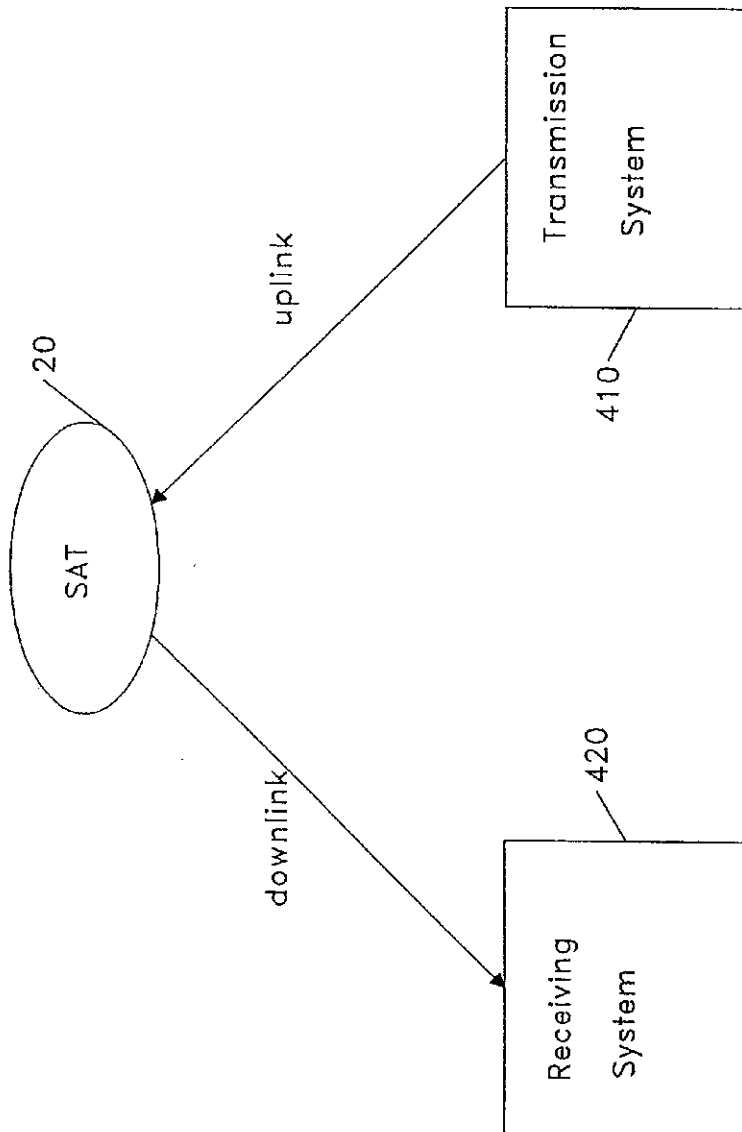


FIGURE 3B

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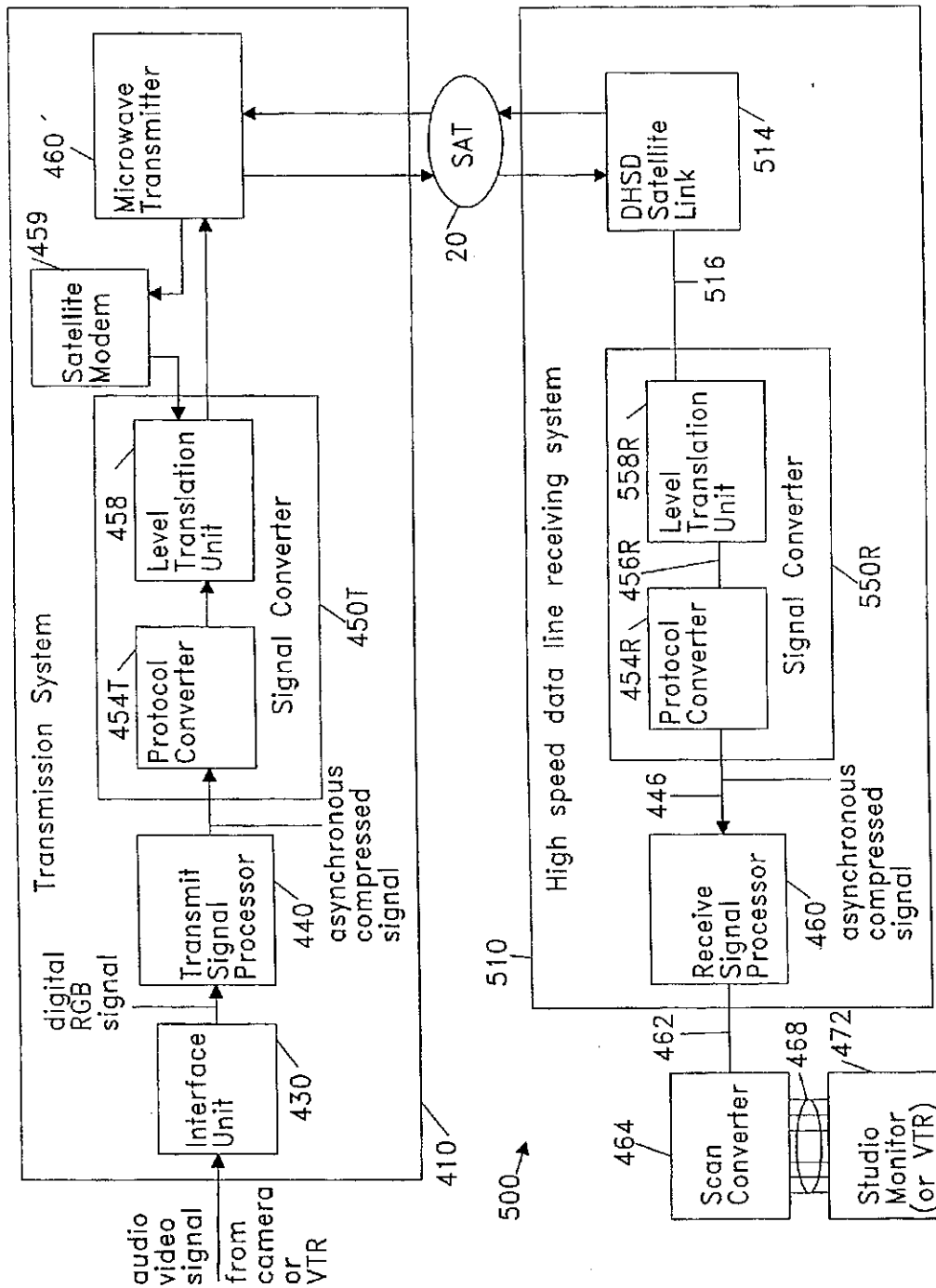


FIGURE 4A

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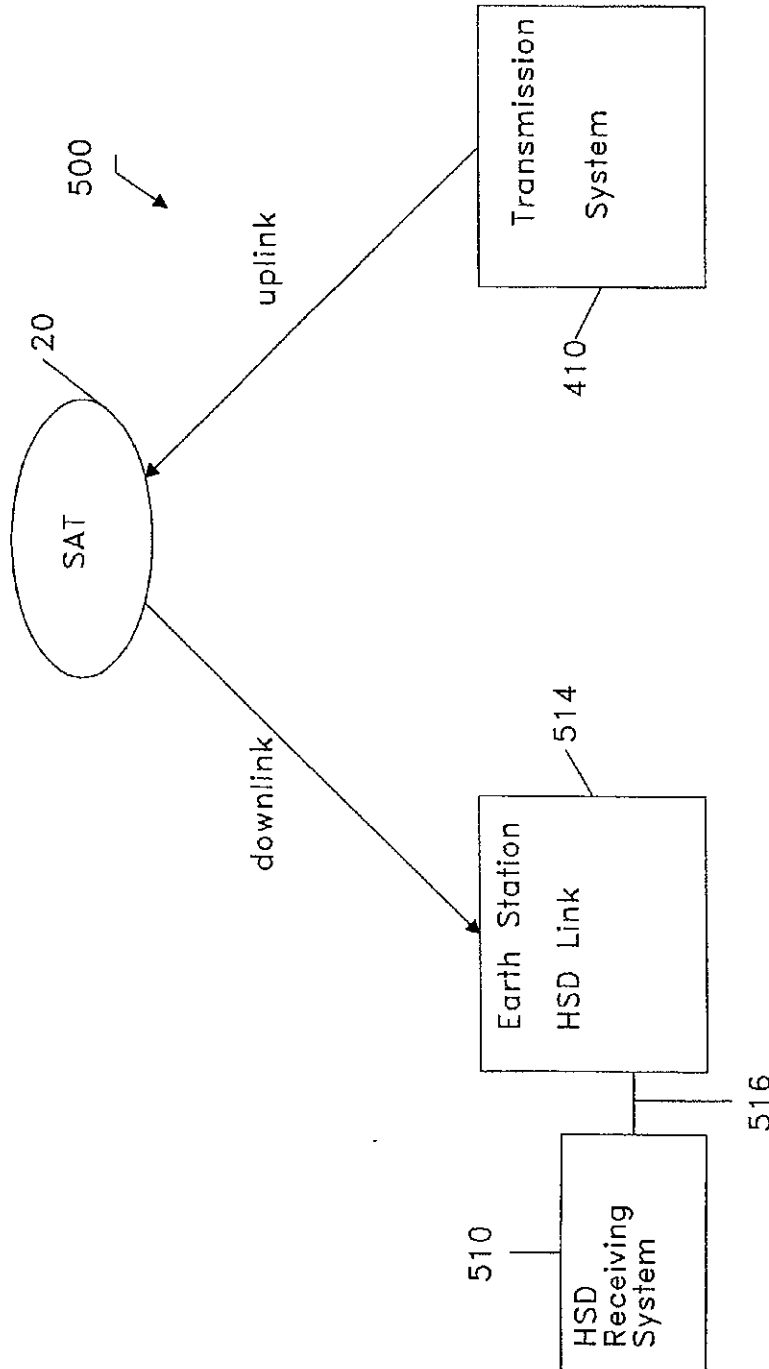


FIGURE 4B

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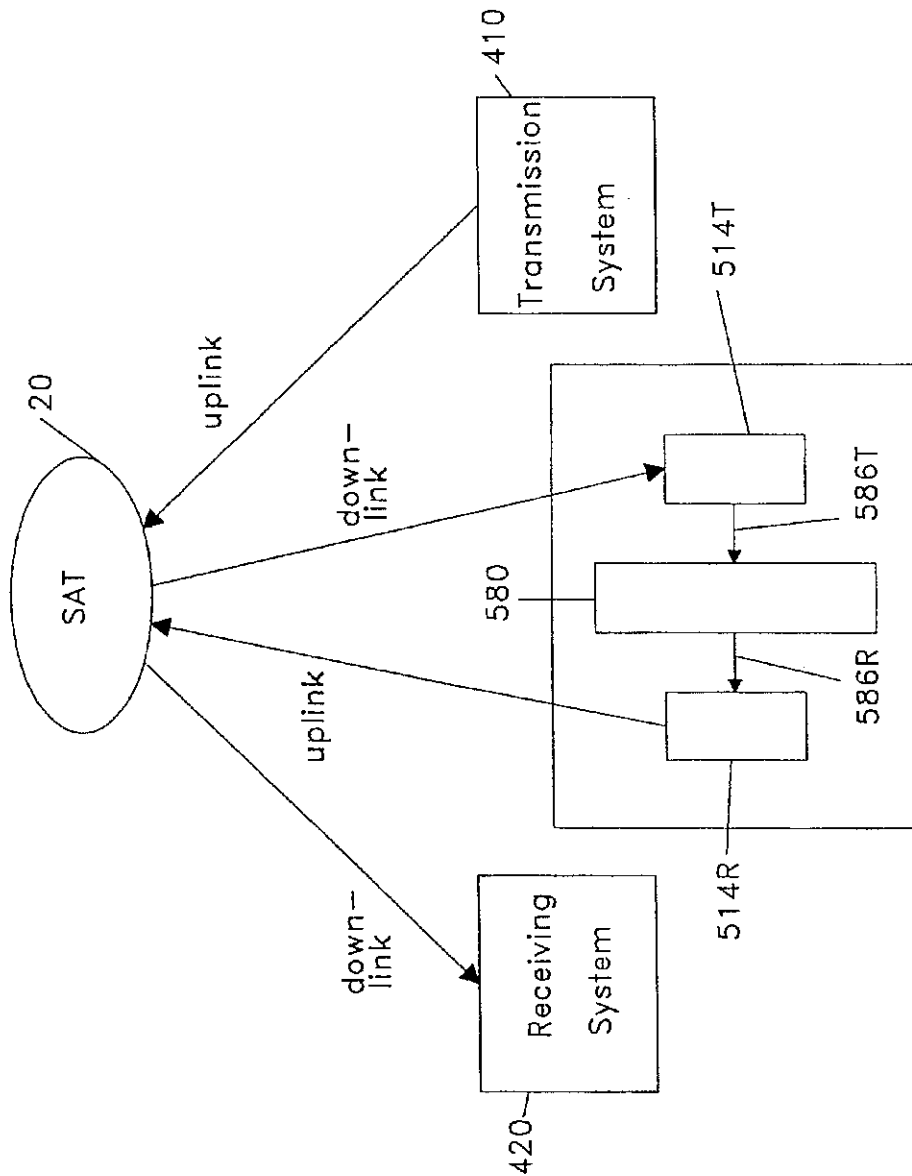


FIGURE 5A

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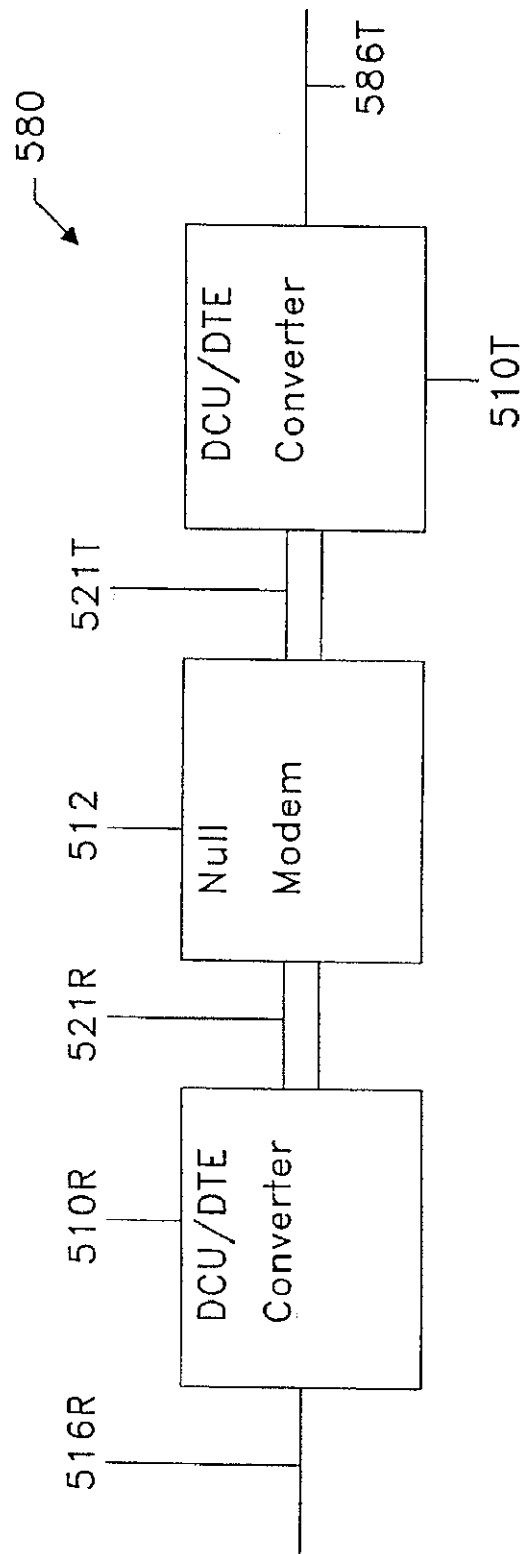


FIGURE 5B

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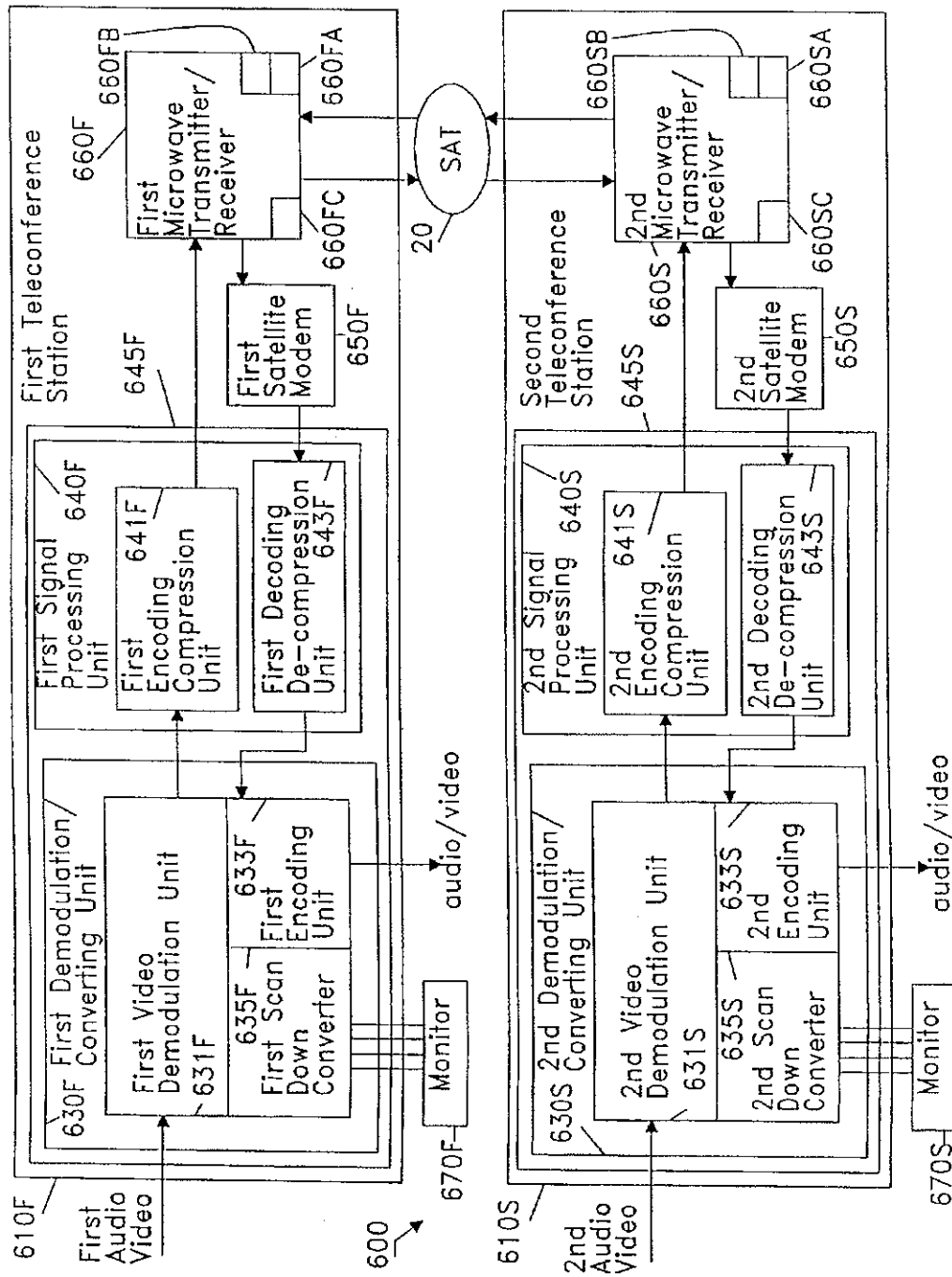


FIGURE 6A

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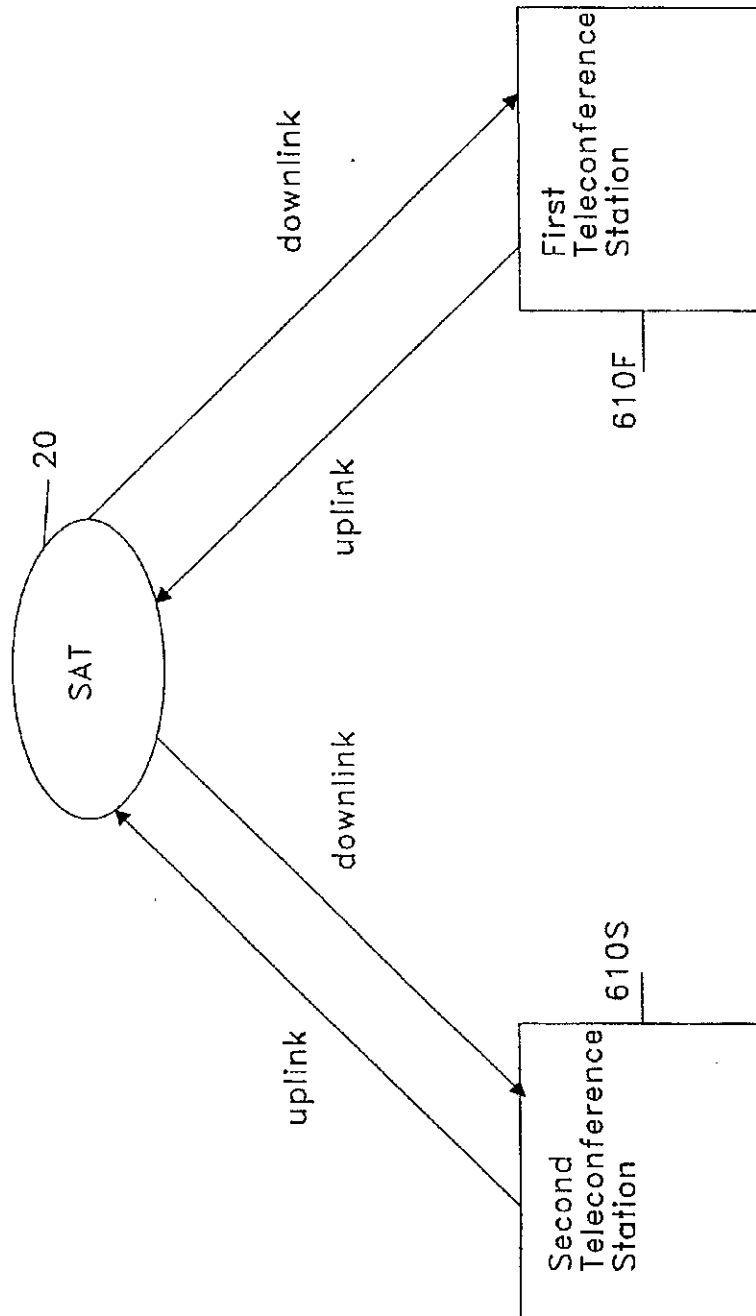


FIGURE 6B

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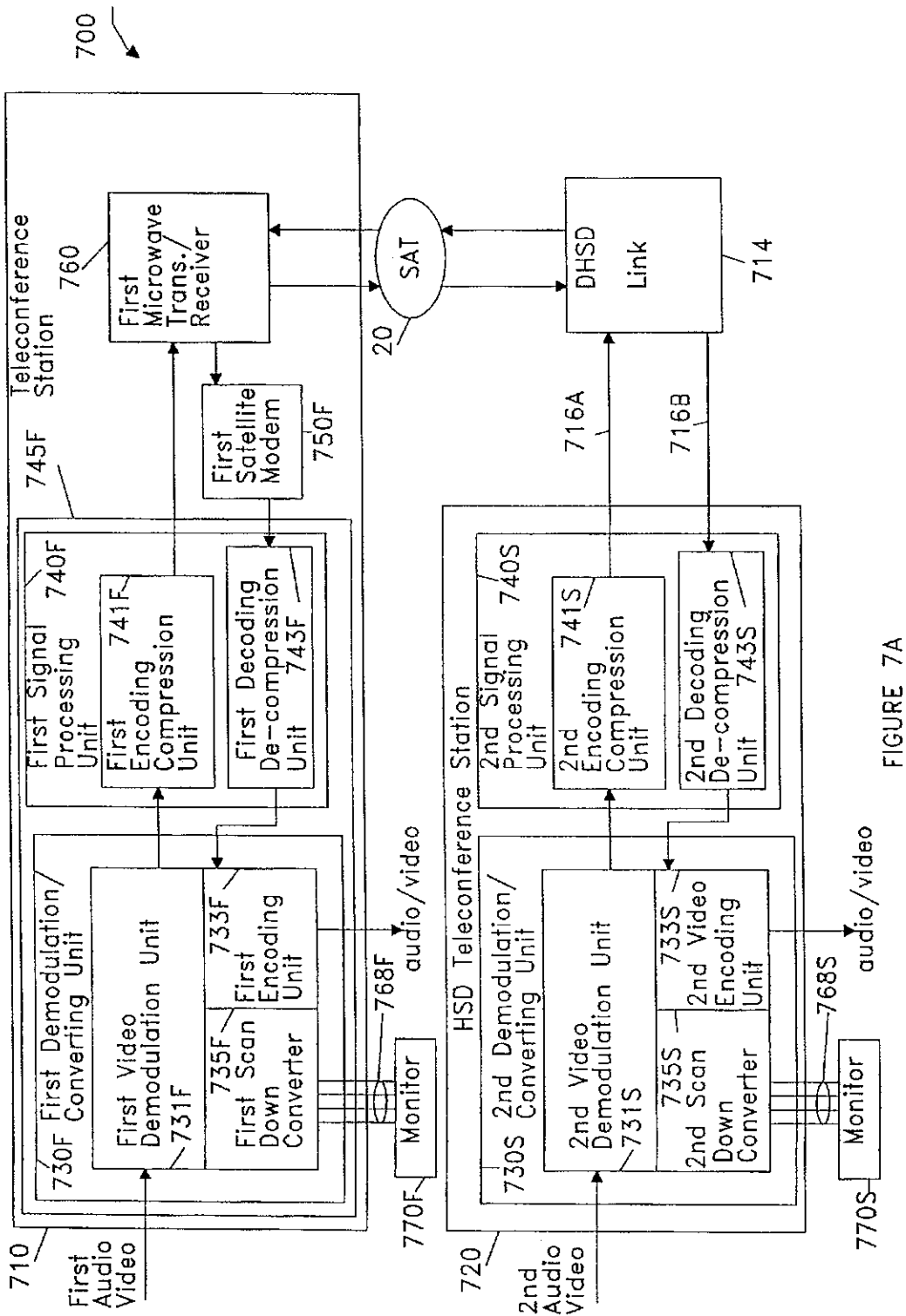


FIGURE 7A

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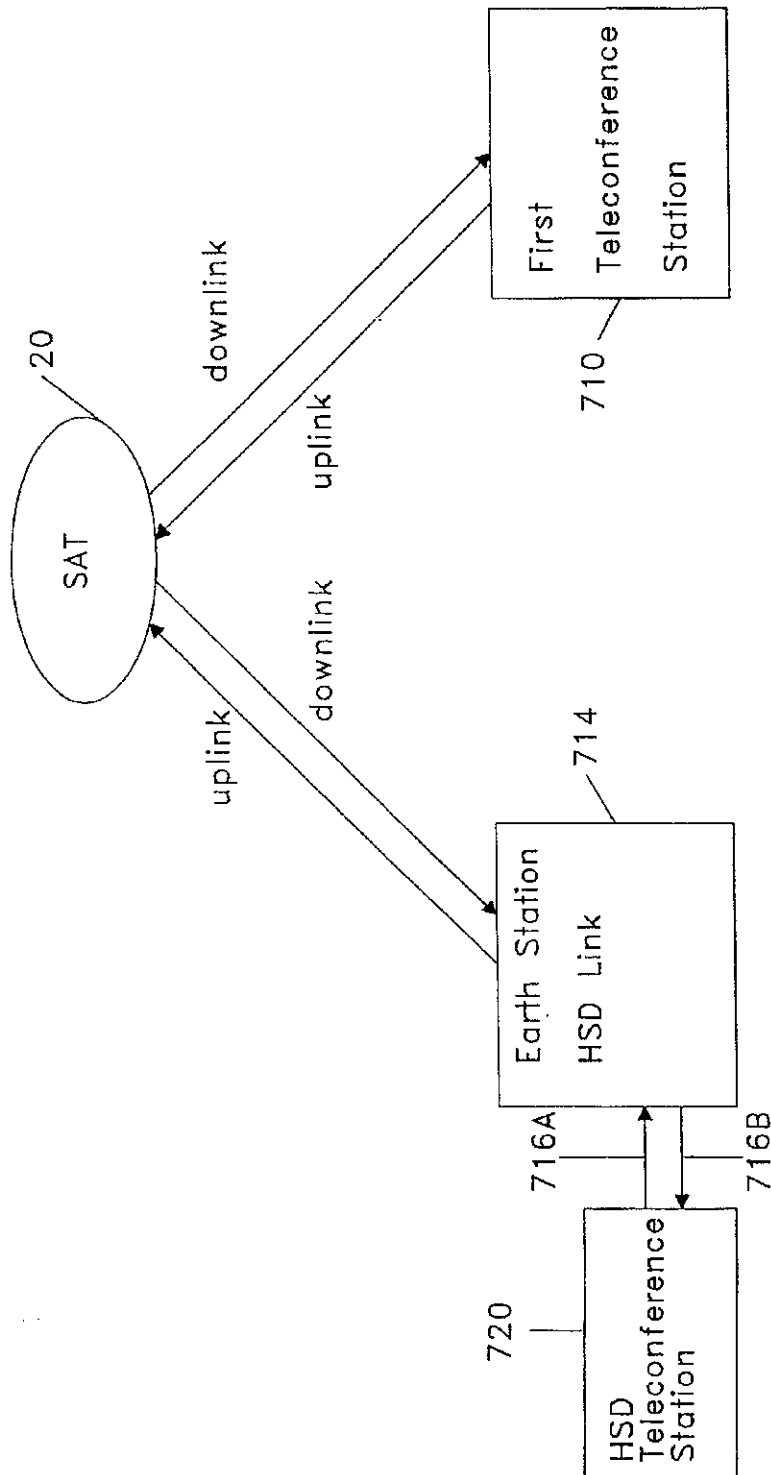


FIGURE 7B

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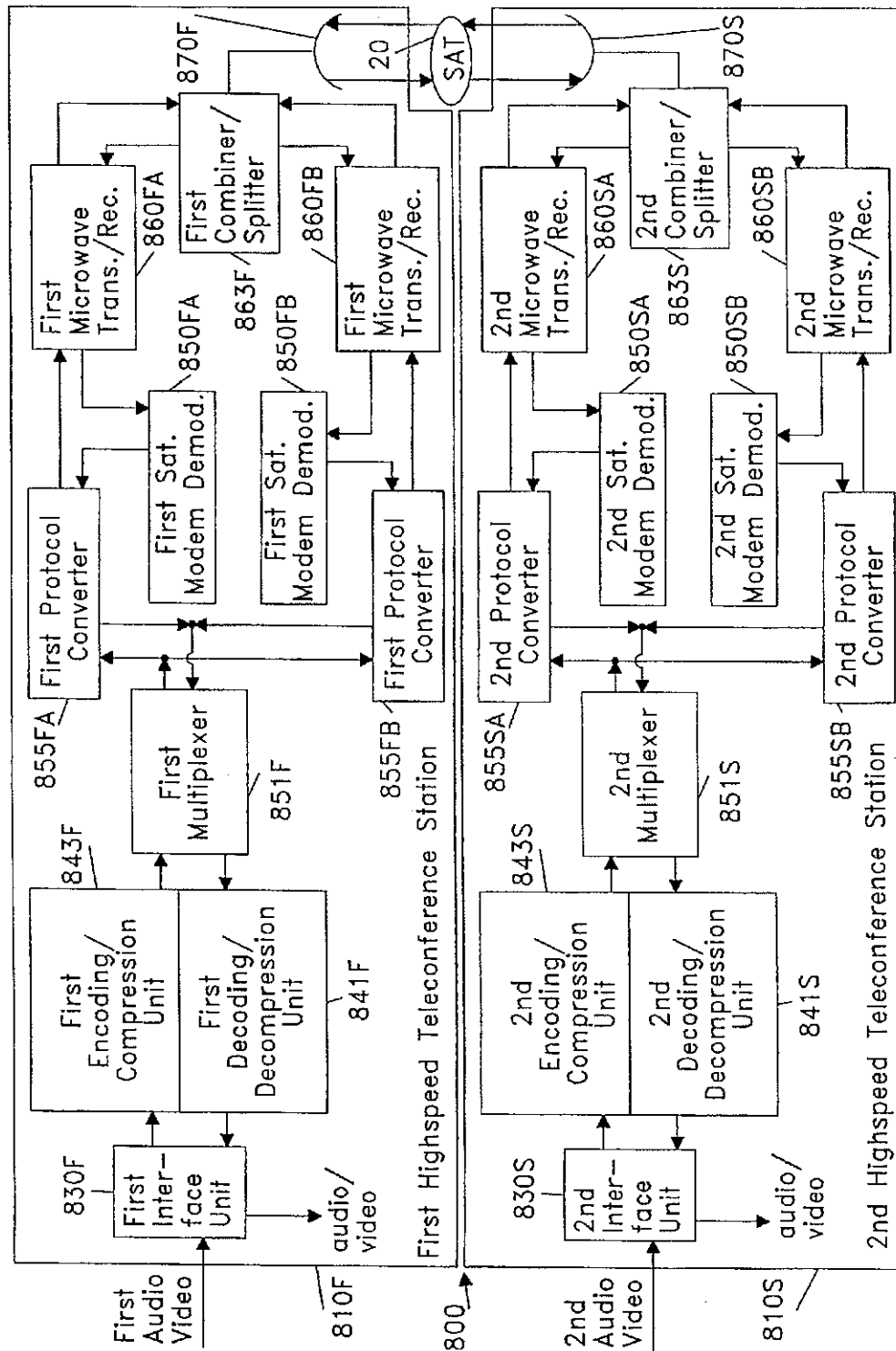
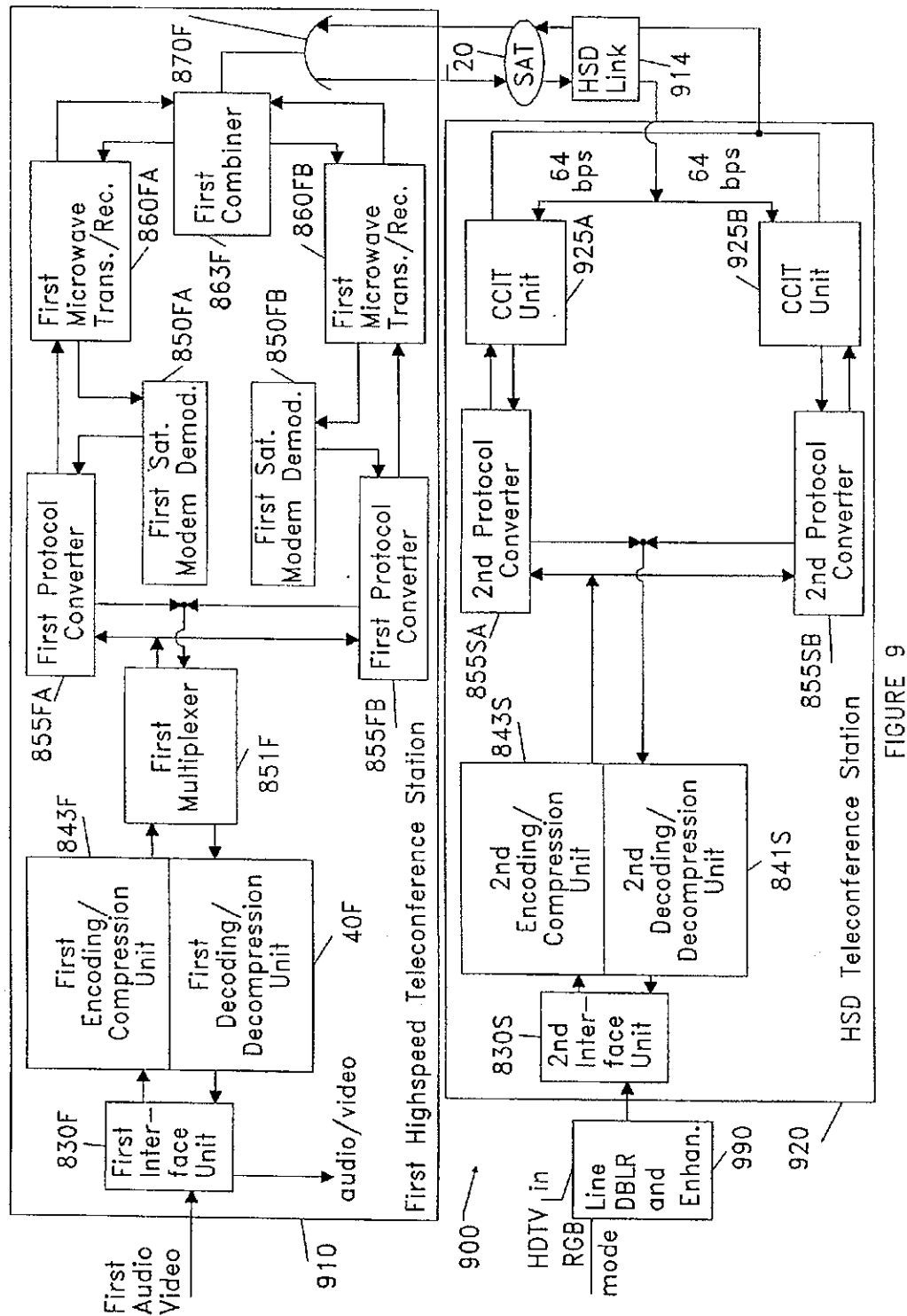


FIGURE 8



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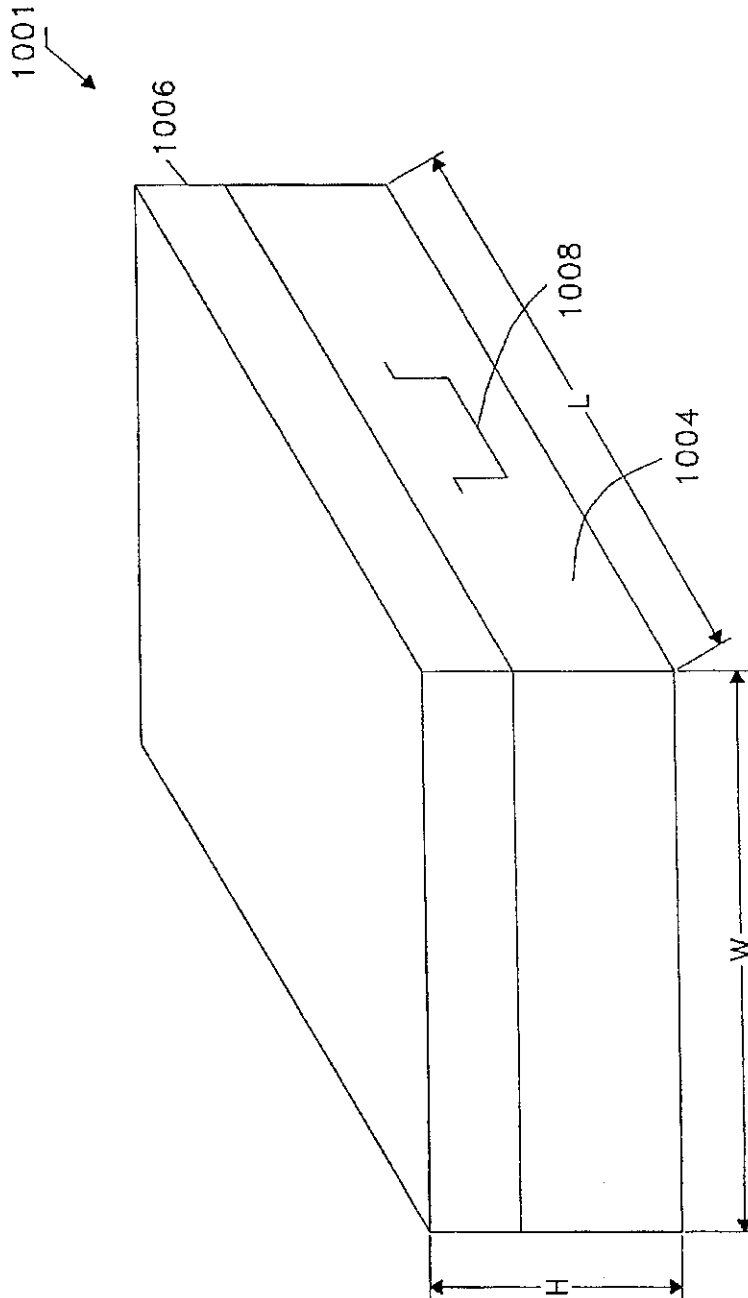


FIGURE 10A

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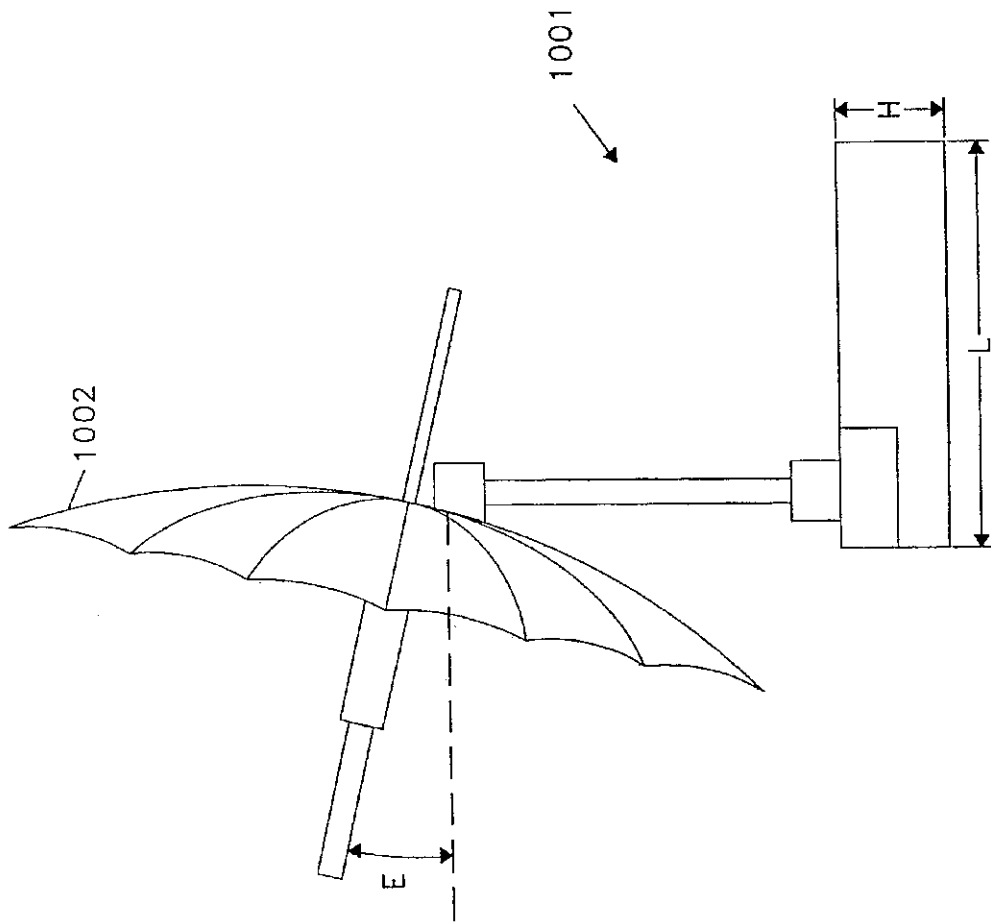


FIGURE 10B

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1

**INTEGRATED COMMUNICATION SYSTEM**

This application is a continuation of application Ser. No. 08/561,168 filed Nov. 21, 1995, now U.S. Pat. No. 5,740, 214, which is a continuation of application Ser. No. 08/047, 089 filed Apr. 16, 1993 now abandoned.

**BACKGROUND OF THE INVENTION****1. Field of the Invention**

This invention relates generally to an apparatus and method for transmitting information from one location to another and in particular to a portable satellite communications system capable of digitizing, compressing and transmitting video information from a first location and receiving, decompressing and viewing the video signal at a second location.

**2. Description of Related Art**

A news team frequently has to transmit a video clip of news story at a some remote location cite back to a home television station. Typically, the news team accomplishes this by either using their own earth station with a satellite dish and uplink electronics or renting such an earth station from a third party. Often, however, the television station cannot afford such an earth station or none is available from a third party and consequently the news team must rely on a nearby government ministry-owned satellite earth station.

FIG. 1A shows a truck 10 with a satellite dish 16 which together serve as a point-of-origin independent work station 14. In order to be point-of-origin independent, work station must use the C or Ku-band and consequently the diameter of dish 16 must be at least 10 to 15 meters. Truck 10 contains all uplink electronics required to transmit microwave signals in the C or Ku in truck 10 modulates a video signal onto a microwave signal and then amplifies and transmits the microwave signal to a satellite typically owned by some government agency. That government agency is not necessarily associated with the country in which the earth station is located. The microwave signal is then downlinked to another large microwave dish 24 at television station 28 where it can be broadcast live to a surrounding area or taped for broadcast at a later time. Alternatively, local television station 28 can retransmit the video clip from dish 24 to another television station 29 having its own dish 30 with a diameter of about 8-12 feet. A local television station can then rebroadcast the video clip to its local viewers using dish 30.

This process has a variety of drawbacks. In addition, earth station 14 is very large, heavy and has expensive uplink electronics. For example, earth station 14 can weigh several tons and consequently shipping such a system can itself become very expensive. Also, truck 10 with uplink electronics and large dish 16 can require 6 to 8 men to assemble and operate. In addition, earth station 14 can cost several hundred thousand dollars to own, or tens of thousands of dollars to rent on a per day basis. Also, in order to operate earth station 14, the news team must obtain a license from the country in which earth station 14 is located. First, since earth station 14 must be shipped to the local country, it also has to pass through that local country's custom office.

Even after all of the above drawbacks are overcome, the news team cannot send the video clip from earth station 14 to television station 28 until several more steps have been performed. First, earth station 14 must contact the appropriate government agency which operates satellite 20 and prebook a specific time period during which the video clip will be transmitted from earth station 14 to television station

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28. In addition, earth station 14 and television station 28 both must now and use the protocol required by the particular agency or government which controls satellite 20. Moreover, since the time of transmission via satellite 20 must be prebooked, the uplink will fail if the news team does not have the taped news clip ready. Also, despite its size and complexity, earth station 14 does not typically contain equipment capable of editing the video clip before it is transmitted to television station 28 via satellite 20.

The above scenario can be described as a "best case" scenario since it was assumed that the television station has its own satellite dish 24 and can rent or own an earth station 14. This situation becomes even more complicated and even impossible if, for example, television station 28 has to rely on transmitting the video clip out of the country even using that country's government satellite earth station as shown, for example, in FIG. 1B. In particular, FIG. 1B shows a government satellite earth station 40 with a large C or Ku dish 44 which uplinks C or Ku microwaves to satellite 20 which in turn downlinks these microwave signals to television station 28. In this scenario, transmission from earth station 40 must be prebooked with the local government in addition to prebooking a transmission time slot with the government or agency which operates satellite 20. (These two governments are likely not the same.) Moreover, since the local government operates earth station 40, it can censor all such news clips and allow only those news clips or sections of news clips to be transmitted with which the government agrees. Furthermore, many countries will not have such a satellite earth station. Consequently, those television stations which do not have access to an earth station similar to earth station 14 in FIG. 1A must hand carry or mail the video clip to television station 28 or to another country which does have an earth station 14. Hence, by the time the video clip arrives at television station 28, the news it contains is old.

In addition to the above difficulties associated with uplinking a microwave signal to satellite 20, downlinking from satellite 20 to earth station 28 may involve one or more hops as shown in FIG. 1C. In particular, FIG. 1C shows microwave signals uplinked from either earth station 14 or governmental earth station 40 to satellite 20 which in turn must be downlinked (due to the location of satellite 20) to a first earth station 50 located, for example, in Europe. First earth station 50 must in turn uplink to a second satellite 20' which in turn downlinks to earth station 28. During this process, the protocol of each link must be complied with. This creates an even greater burden on the news team.

Teleconferencing technology like news gathering and broadcasting technology involves transmitting video signals from one location to another. However, teleconferencing differs from news gathering in that news gathering typically involves transmitting high quality video images from a first location and receiving that information at a second location, whereas teleconferencing involves both transmitting and receiving video images at each of the first and second locations albeit not necessarily video images of broadcast quality.

FIG. 2 shows a first building 200 and a second building 240 interconnected via a high speed digital data network 250 such as (ACUNET) or integrated services digital network (ISDN). These networks are capable of transmitting digital information at rates of 64 kilobits/second (kbps) or in some cases 128 kbps. Network 250 must include a signal routing center 260 (typically owned and operated by a telephone company) and data lines 264 and 268 interconnecting teleconferencing equipment 274 in building 200 to teleconfer-

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encing equipment 278 in building 240. Signal routing system 260 can include a variety of satellite, fiber optic and standard hardwired links.

Teleconferencing equipment 274 and 278 must be capable of transmitting and receiving audio/video signals in real time in order to do this, data lines 264 and 268 must be capable of transmitting more than the standard telephone line audio bandwidth of 9.6 kbps. Consequently, standard telephone lines cannot be used to interconnect teleconferencing equipment 274 to teleconferencing equipment 278.

ACUNET or ISDN interconnecting can transmit at high enough bit rates to enable interconnection of teleconferencing equipment. However, high speed digital (HSD) lines or ISDN lines have been installed in only a few cities throughout the United States and only in the main business districts of those cities. Moreover, only selected buildings within those main business districts have been hard wired with high speed data lines 264 and 268. Also, installation of such high speed data lines is a long and expensive process.

#### SUMMARY OF THE INVENTION

An object of the invention therefore is to provide a portable transmission system capable of transmitting information from one location to another.

Another object of the invention is to provide a portable transmission system which can be set up quickly and easily.

Another object of the invention is to provide a portable receiving system capable of receiving audio/video information from the satellite.

Another object of the invention is to provide a teleconferencing station capable of transmitting and receiving audio/video information.

Another object of the invention is to provide a transmission system which is also capable of receiving audio/video information.

Another object of the invention is to provide a receiving system which is also capable of transmitting audio/video information.

Another object of the invention is to provide a transmission system which can transmit a broadcast quality audio/video signal via microwave signals without using a local earth station.

Another object of the invention is to provide a transmission system which includes editing equipment for editing a video clip before transmission.

Another object of the invention is to be able to transmit audio/video information from a remote area without having to utilize multiple satellites, on an ad-hoc, prebooked and prearranged, event-by-event basis.

One advantage of this system is that information can be transferred independent of a local government's communications protocol and in multi-satellite configurations, information is transmitted transparently and automatically.

Another advantage of the invention is that it utilizes over 95% of the bandwidth available in a satellite link for audio/video information as an 5% for overhead information as opposed to the current practice of 60% of the bandwidth for audio/video information and 40% of the bandwidth for overhead.

Another advantage of the invention is that it is that it is point-of-origin independent.

Another advantage of the invention is that it makes it possible to transmit and receive audio/video information from any place in the world to any place in the world except possibly at the extreme polar caps.

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Another advantage of the invention is that it provides transmission of audio/video information on an on-demand, dial-up basis.

Another advantage of the invention is that it is portable in the sense that it can be hand carried by one person in a suitcase.

Another advantage of the invention is that it transmits high quality television pictures even with the presence of small to medium motion in the pictures.

Another advantage of the invention is that it can multiply line rates and feed multi-scan monitors and screens thereby dramatically improving picture resolution.

Another advantage of the invention is that it is compatible with high density (HD) television.

Another advantage of the invention is that it can be set up and made ready to transmit within a few minutes.

Another advantage of the invention is that it can receive data from a HSD line or an ISDN line.

Another advantage of the invention is that the power from a single car battery can power the transmission or receiving system.

Another advantage of the invention is that it automatically compensates for color standards differences when transmitting, e.g., from PAL (the European standard) to NTSC (the U.S. standard) and vice versa.

One feature of the invention is that it uses a small, fabric, microwave umbrella dish which transmits the microwave signal on the L-band (1.5 Ghz).

Another feature of the invention is that it has a built-in forward error correction modem which compensates for heavy snow or rain fall blockage during transmission.

Another feature of the invention is that it uses coding and decoding (CODEC) technology which has a very high degree of motion adaptivity and motion compensation, thereby providing a smooth, high quality picture.

Another feature of the invention is that an analog audio/video signal is digitized and compressed before being transmitted.

Another feature of the invention is that it uses field time visually lossless digital data compression of an audio/video signal.

Another feature of the invention is that it includes video editing equipment for editing the audio/video signal before transmission.

Another advantage of the invention is that the transmission system can be easily converted to a receiving system and vice versa.

Another feature of the invention is that it compresses digital video information when operating as a transmission system and decompresses digital video information when operating as a receiving system.

The above and objects, advantages and features are accomplished in accordance with the invention by the provision of a portable integrated transmission system, including: a transmit interface unit for transforming an analog signal into a digital signal; a transmit signal processing unit for compressing the digital signal into a compressed asynchronous signal; a transmit signal converting unit for converting the compressed asynchronous signal into a compressed synchronous signal; and a microwave transmitting unit for generating a microwave signal and modulating the microwave signal with the compressed synchronous signal to produce a modulated microwave signal and for transmitting the modulated microwave signal.

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The above and objects, advantages and features are further accomplished in accordance with the invention by the provision of a portable integrated receiving system, including: a microwave receiving unit for receiving a modulated microwave signal which has been modulated with a compressed synchronous signal and for demodulating the modulated microwave signal into the compressed synchronous signal; a receive signal converting unit for converting the compressed synchronous signal into a compressed asynchronous signal; and a receive signal processing unit for decompressing the compressed asynchronous signal into a digital signal and outputting the digital signal.

The above and objects, advantages and features are also accomplished in accordance with the invention by the provision of a transmission and receiving system, which includes: a transmit interface unit for transforming an analog signal into a digital signal; a transmit signal processing unit coupled to the transmit interface unit for compressing the digital signal into a compressed asynchronous signal; a transmit signal converting unit coupled to the transmit signal processing unit for converting the compressed asynchronous signal into a compressed synchronous signal; a microwave transmitting unit coupled to the transmit signal converting unit for generating a microwave signal and modulating the microwave signal with the compressed synchronous signal to produce a first modulated microwave signal and for transmitting the first modulated microwave signal; a microwave receiving unit for receiving a second modulated microwave signal which has been modulated with the compressed synchronous and for demodulating the second modulated microwave signal yielding the compressed synchronous signal; a receive signal converting unit coupled to the microwave receiving unit for converting the compressed synchronous signal into the compressed asynchronous signal; and a second signal processing unit coupled to the receive signal converting unit for decompressing the compressed asynchronous signal into the digital signal and outputting the digital signal.

The above and objects, advantages and features are alternatively accomplished in accordance with the invention by the provision of a portable integrated digital high speed data line receiving system, including: a receive signal converting unit for receiving a compressed synchronous signal from a high speed data line, translating voltage levels of the compressed synchronous signal and converting the compressed synchronous signal into a compressed asynchronous signal; and a receive signal processing unit coupled to the receive signal converting unit for decompressing the compressed asynchronous signal into a digital signal and outputting the digital signal.

The above and objects, advantages and features are accomplished in accordance with the invention by the provision of a portable integrated teleconference station, including: a demodulating unit for receiving and demodulating an analog signal and outputting a first digital signal; an encoding and compressing unit coupled to the demodulating unit for receiving the first digital signal and for encoding and compressing the first digital signal to yield a first compressed encoded signal; a microwave transmitting and receiving unit coupled to the encoding and compressing unit for receiving the first compressed encoded signal, for generating a first microwave signal, for modulating the first microwave signal according to the first compressed encoded signal to produce a first modulated microwave signal and for outputting the first modulated microwave signal, as well as for receiving a second modulated microwave signal which has been modulated with a second compressed encoded

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signal; a satellite modem demodulating unit coupled to the microwave transmitting and receiving unit for receiving and demodulating the second modulated microwave signal to yield the second compressed encoded signal; and a decoding and decompressing unit coupled to the satellite modem demodulating unit for decoding and decompressing the second compressed encoded signal into a second digital signal and for outputting the second digital signal.

The above and objects, advantages and features are alternatively accomplished in accordance with the invention by the provision of a high speed digital teleconference station, including: a demodulating unit for receiving a first analog signal and outputting a first digital signal; an encoding/compression unit coupled to the demodulating unit for receiving, compressing and encoding the first digital signal into a first compressed encoded signal and outputting the first compressed encoded signal to a high speed data line; and a decoding/decompression unit for receiving a second compressed encoded signal from the high speed data line and for decoding and decompressing the second compressed encoded signal into a second digital signal and outputting the second digital signal.

The above and objects, advantages and features are further accomplished in accordance with the invention by the provision of a high speed teleconference station including: an interface unit for receiving a first analog signal and outputting a first digital signal; an encoding/compressing unit for encoding and compressing the first digital signal to yield a first compressed encoded signal; a multiplexing and demultiplexing unit for receiving and splitting the first compressed encoded signal into two first compressed encoded signals and for receiving two second encoded compressed signals and outputting a combined second encoded compressed signal; dual converting unit coupled to the multiplexing and demultiplexing unit for receiving the two first compressed encoded signals and outputting two first synchronous signals and for receiving two second synchronous signals and outputting the two second encoded compressed signals; two microwave transmitter/receiver unit for receiving the two first synchronous signals, for generating two first microwave signals, for modulating the two first microwave signals according to the two first synchronous signals to produce two first modulated microwave signals and for outputting the two first modulated microwave signals, as well as for receiving two second modulated microwave signals which have been modulated with the two second synchronous signals and for outputting the two second synchronous signals; combining/splitting unit for combining the two first modulated microwave signals into a combined first modulated microwave signal and for splitting a combined second modulated microwave signal into the two second modulated microwave signals; and decoding/decompressing unit coupled to the multiplexing and demultiplexing unit for decoding and decompressing the combined second encoded compressed signal and outputting a second digital signal.

The above and objects, advantages and features are further accomplished in accordance with the invention by the provision of a method of transmitting and receiving information, including the steps of: compressing a digital signal containing the information into a compressed asynchronous signal using a first processor; converting the compressed asynchronous signal into a compressed synchronous signal; generating a microwave signal and modulating the microwave signal with the compressed synchronous signal to produce a first modulated microwave signal using a microwave transmitter; transmitting the first modu-

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lated microwave signal with the microwave transmitter; receiving a second modulated microwave signal which has been modulated with the compressed synchronous signal at a microwave receiver; demodulating the second modulated microwave signal yielding the compressed synchronous signal; converting the compressed synchronous signal into the compressed asynchronous signal; and decompressing the compressed asynchronous signal into the digital signal using a second processor; and outputting the digital signal containing the information.

The above and other objects, advantageous and features of the present invention will become more apparent from the following description of embodiments thereof taken in conjunction with the accompanying drawings.

#### BRIEF DESCRIPTION OF THE DRAWINGS

FIGS. 1A and 1B show a truck with a satellite dish which together serve as a point-of-origin independent work station and a government satellite earth station, respectively, and FIG. 1C shows microwave signals uplinked from either the earth station of FIG. 1A or the governmental earth station of FIG. 1B.

FIG. 2 shows a first building and a second building interconnected via a high speed digital data network such as ACUNET or ISDN.

FIGS. 3A and 3B show a transmission and receiving system according to one embodiment of the invention.

FIGS. 4A and 4B show a transmission and digital receiving system according to another embodiment of the invention.

FIGS. 5A and 5B show an alternative transmission system and receiving system which communicate with each other via a patch unit.

FIGS. 6A and 6B show a teleconference system according to another embodiment of the invention.

FIGS. 7A and 7B show a teleconference system according to yet another embodiment of the invention.

FIG. 8 shows a high speed (128 kbps) teleconference system.

FIG. 9 shows a high speed teleconference system with a first high speed teleconference station as in FIG. 8 but with a second high speed teleconference station according to another embodiment of the invention.

FIG. 10A shows a suitcase for housing any one of the embodiments described above and FIG. 10B shows the suitcase in FIG. 10A with an opened fabric microwave umbrella dish.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIGS. 3A and 3B show a transmission and receiving system 400 according to one embodiment of the invention. In particular, FIGS. 3A and 3B show a transmission system 410 at a first location which communicates with a receiving system 420 at a second location via satellite 425. Throughout this discussion, embodiments of the invention will be described with respect to transmitting audio/video information, it is understood that the invention will transmit any type of analog or digital information such as digital data files, sensor signals (analog or digital), etc. . . .

Transmission system 410 includes an interface unit 430 which receives an analog audio signal and an analog video signal which will be referred to here as an analog audio/video signal and transforms that analog audio/video signal

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into a digital red, green, blue (RGB) signal. The audio/video signal can come from a camera or a video tape recorder (VTR) neither of which is shown in the Figure. Interface unit 430 demodulates the audio/video signal which is either an NTSC, PAL, or SECIM signal and outputs the digital RGB signal. The digital RGB signal output from interface unit 430 is then received by a transmit signal processor 440 which compresses the digital RGB signal into an asynchronous compressed signal and stores that asynchronous compressed signal on a hard disk 440A. Transmit signal processor 440 can then output the asynchronous compressed signal at high speeds using a high speed modem (not shown). The asynchronous compressed signal is in turn received by a signal converter 450T which includes a protocol converter 454T and a level translation unit 458T. Protocol converter 454T receives the asynchronous compressed signal and converts that signal to a synchronous compressed signal. The synchronous compressed signal is then input to level translation unit 458T which swaps wires and translates the synchronous compressed signal voltage levels into a level translated synchronous compressed signal which is received by a microwave transmitter 460T. Microwave transmitter 460T includes a modulator which modulates the synchronous compressed signal onto a modulated L-band microwave signal. Microwave transmitter 460 then transmits the modulated L-band microwave signal to satellite 20 (which can include one or more earth stations) which receives the L-band microwave signal and transmits that signal to receiving system 420. In particular, microwave transmitter 460T includes an L-band microwave generator 460A, a satellite dish 460B and a microwave modulator 460C. Satellite modem 459 monitors the transmission of the modulated microwave signal from microwave transmitter 460T to receiving system 420. In particular, satellite modem 459 performs handshaking with receiving system 420 at the beginning of transmission and continues to monitor the transmission to determine whether received system 420 is being sent the correct signal.

Receiving system 420 includes a microwave receiver 470 which receives the modulated microwave signal and demodulates that signal. Satellite modem 471 performs handshaking with transmission system 410 in a manner similar to satellite modem 459. Microwave receiver 470 includes a microwave demodulator 470C and a microwave dish 470B. A receive signal converter 450R which includes a level translation unit 458R and a protocol converter 454R is similar to signal converter 450T with corresponding level translation unit 458T and protocol converter 454T, respectively. Signal converter 450R operates like signal converter 450T used in the reverse direction. Namely, level translation unit 458R receives a level translated demodulated signal and translates the level of that signal back down to a synchronous (RS-232) signal which can be received by protocol converter 454R and converted to an asynchronous compressed signal. This asynchronous compressed signal is then received by receive signal processor 460 which decompresses it and stores it on a hard disk 460A. If the decompression of the asynchronous compressed signal received by receive signal processor 416 is the inverse of the compression which the digital RGB signal underwent in transmit signal processor 440, receive signal processor 460 outputs that same digital RGB signal. Consequently, the digital signal at the first location is available at the second location. A scan converter 464 can receive this digital signal and drive a studio monitor 472 via bus 468.

FIGS. 4A and 4B show a transmission and digital receiving system 500 according to another embodiment of the

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invention. Those elements in system 500 which are also used in transmission and receiving system 400 will be given the same reference numerals. Transmission system 410 is identical to system 410 in system 400 of FIG. 3A. However, instead of receiving microwave signals from satellite 20 via microwave receiver 470 as in FIG. 3A, a digital receiving system 510 receives digital data from a digital high speed data line (DHSD) link 514 available from a phone company. Receiving system 510 includes a signal converter 450R followed by receive signal processor 460. Signal converter 450R includes level translation unit 520R followed by protocol converter 454R.

The microwave signal modulated with compressed digital data is received by a satellite dish (here considered to be part of DHSD link 514) and in turn demodulated to yield a demodulated high speed digital (HSD) signal on DHSD line 516. DHSD link 514 includes satellite, fiber optic and hard wire links. Signal converter 450R receives the digital signal at level translation unit 558R which translates its voltage level for transmission on serial line 456R as a synchronous compressed signal. Protocol converter 454R receives and transforms the synchronous compressed signal into an asynchronous, compressed signal for transmission on bus 446. Receive signal processor 460 in turn receives and decompresses the asynchronous, compressed signal into a digital RGB signal ready to be received and converted by scan converter 464 for display via bus 468 on monitor (or VTR) 472.

FIG. 5A shows an alternative way in which transmission system 410 and receiving system 420 can communicate with each other by using a patch unit 580. FIG. 5B shows a closer view of patch unit 580. Referring to FIG. 5A, transmission system 410 outputs a microwave signal with a digitized and compressed video clip modulated onto the microwave signal. Satellite 20 receives the microwave signal from transmission system 410 and downlinks the microwave signal to a transmitting DHSD link 514F identical to DHSD link 514 of FIG. 4A. Transmitting DHSD link 514T receives the microwave signal via a satellite (not shown), transforms that signal into an HSD signal and transmits that HSD signal to patch unit 580 via line 586T. Patch unit 580 then routes that signal to a receiving line 586R. Receiving DHSD link 514R receives the HSD signal, transforms that signal into a microwave signal and transmits that microwave signal back to satellite 20. Satellite 20 receives that microwave signal and transmits it to receiving system 420 which receives it and eventually outputs a digital RGB signal.

FIG. 5B shows a closer view of patch unit 580. Patch unit 580 includes a DCU/DTE conversion unit 510T connected to a null modem 512 followed by a DCU/DTE conversion unit 510R. Line 586T transmits the HSD signal output from DHSD transmission link to DCU/DTE converter 510T and outputs a digital signal on a V.35 pin bus 521T to null modem 512. Null modem 512 is wired so that both DCU/DTE converters 510T and 510R operate as if they are connected to a regular DCU modem. Null modem 512 outputs the digital signal on V.35 pin bus 521R to DCU/DTE converter 510R which receives it and outputs the digital signal via 516R to DHSD link 514R for eventual transmission to satellite 20.

FIGS. 6A and 6B show a teleconference system 600 according to another embodiment of the invention. In particular, teleconference system 600 includes a first teleconference station 610F at a first location and an identical second teleconference station 610S at a second location. First and second teleconference stations 610F and 610S have first and second demodulation/converting units 630F and

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630S, first and second signal processing units 640F and 640S, first and second satellite modems 650F and 650S and microwave transmitter/receivers 660F and 660S, respectively. First and second microwave transmitter/receivers 660F and 660S include L-band microwave generators 660FA and 660SA, satellite dishes 660FB and 660SB and microwave modulators 660FC and 660SC, respectively. First and second demodulation/converting units 630F and 630S include first and second video demodulation units 631F and 631S, first and second encoding units 633F and 633S and first and second scan down converters 635F and 635S, respectively. Also, first and second signal processing units 640F and 640S include first and second encoding/compression units 641F and 641S, as well as first and second decoding/decompression units 643F and 643S, respectively. First demodulation/converting unit 630F together with first signal processing unit 640F make up a first two-way digital video processor 645F. Similarly, second demodulation/converting unit 630S together with second signal processing unit 640S make up a second two-way digital video processor 645S.

Teleconference system operates to send a first audio/video signal from a first camera (not shown) to be displayed by second monitor 670S at second teleconference station 610S while simultaneously sending a second audio/video signal from a second camera (not shown) at second teleconference station 610S to second teleconference station 610S to be displayed by first monitor 670F at first teleconference station 610F. Each of these processes are described below.

A first analog audio/video signal is sent from first teleconference station 610F to second teleconference station 610S as follows. The first analog audio/video signal output from a first camera (not shown) at the first location is input to first video demodulation unit 631F. First video demodulation unit 631F then digitizes and demodulates the first analog audio/video signal and outputs a resulting first digital signal. The first digital signal is then input to first encoding/compression unit 641F which can compensate for a high degree of motion, thereby providing smoother, sharper, "non-pixelized" or jittering pictures. First encoding/compression unit 641F in turn encodes and compresses the first digital signal and outputs a first compressed, encoded signal. The first compressed, encoded signal is then received by first microwave transmitter/receiver 660F, which in turn modulates a first microwave signal with the first compressed, encoded signal and transmits a resulting first modulated microwave signal to satellite 20.

Satellite 20 receives the first modulated microwave signal and outputs a downlinking modulated microwave signal having the first compressed, encoded signal modulated thereon. Second microwave transmitter/receiver 660S in second teleconference station 610S receives and demodulates this downlinking modulated signal into the first compressed, encoded signal. Second satellite modem 650S monitors second transmitter/receiver 660S to insure that the signal output from second microwave transmitter/receiver 660S is the same as the first compressed, encoded signal which was earlier output from first signal processing unit 640F. Second transmitter/receiver 660S outputs the first compressed, encoded signal to second decoding/decompression unit 643S in second signal processing unit 640S. Second decoding/decompression unit 643S demodulates and decompresses the first encoded, compressed signal into the first digital signal which is the same as the first digital signal output from first demodulation/converting unit 630F in first teleconference station 610F. This first digital signal is then received by second encoding unit 633S of

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second demodulation/converting unit 630S to be encoded into NTSC or PAL protocol for viewing on a television set (not shown). Alternatively, the first digital signal is received by second scan down converter 635S of second demodulation/converting unit 630S which outputs a display signal to be viewed on second studio monitor 670S.

A second analog audio/video signal is sent from second teleconference station 610S to first teleconference station 610F as follows. The second analog audio/video signal is output from a second camera (not shown) at the second location and input to second video demodulation unit 631S. Second video demodulation unit 631S then digitizes and demodulates the second analog audio/video signal and outputs a resulting second digital signal. The second digital signal is then input to second encoding/compression unit 641S of second signal processing unit 640S. Second encoding/compression unit 641S in turn encodes and compresses the second digital signal and outputs a second compressed, encoded signal. The second compressed, encoded signal is then received by second microwave transmitter/receiver 660S, which in turn modulates a second microwave signal with the second compressed, encoded signal and transmits a resulting second modulated microwave signal to satellite 20.

Satellite 20 receives the second modulated microwave signal and outputs a downlinking modulated microwave signal having the second compressed, encoded signal modulated thereon. First microwave transmitter/receiver 660F in first teleconference station 610F receives and demodulates this downlinking modulated signal into the second compressed, encoded signal. First satellite modem 650F monitors first transmitter/receiver 660F to insure that the signal output from first microwave transmitter/receiver 660F is the same as the second compressed, encoded signal which was earlier output from second signal processing unit 640S. First transmitter/receiver 660F outputs the second compressed, encoded signal to first decoding/decompression unit 643F in first signal processing unit 640F. First decoding/decompression unit 643F demodulates and decompresses the second encoded, compressed signal into the second digital signal which is the same as the second digital signal output from second demodulation/converting unit 630S in second teleconference station 610S. This second digital signal is then received by first encoding unit 633F of first demodulation/converting unit 630F to be encoded into NTSC or PAL protocol for viewing on a television set (not shown). Alternatively, the second digital signal is received by first scan down converter 635F of first demodulation/converting unit 630F which outputs a display signal to be viewed on first studio monitor 670F.

FIGS. 7A and 7B show a teleconference system 700 according to another embodiment of the invention. Teleconference system 700 includes teleconference station 710 at a first location and an HSD teleconference station 720 at a second location. Teleconference station 710 is identical to first or second teleconference station 610F or 610S of teleconference system 600 in FIG. 6A. In particular, teleconference station 710 has a first two-way digital video processor 745F together with first satellite modem 750F and first microwave transmitter/receiver 760F which are identical to first two-way digital video processor 645F, first satellite modem 650F and first microwave transmitter/receiver 660F of FIG. 6A, respectively. Also, first two-way digital video processor 745F includes a first demodulation/converting unit 730F and a first signal processing unit 740F identical to first demodulation/converting unit 630F and first signal processing unit 640F of FIG. 6A, respectively.

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Similarly, first demodulation/converting unit 730F includes a first video demodulation unit 731F, first encoding unit 733F and first scan down converter 735F which are identical to first video demodulation unit 631F, first encoding unit 633F and first scan down converter 635F, respectively of FIG. 6A. Finally, first signal processing unit 740F includes first second encoding/compression unit 741F, as well as first decoding/decompression unit 743F which are identical to first and second encoding/compression unit 641F, as well as first decoding/decompression unit 643F, respectively of FIG. 6A.

Second HSD teleconference station 720 is connected to a digital high speed data (DHSD) link 714 via two HSD lines 716A and 716B. HSD teleconference station 720 includes a second demodulation/converting unit 730S and a second signal processing unit 740S. Second demodulation/converting unit 730S includes a second video demodulation unit 731S, second encoding unit 733S and second scan down converter 735S. Second signal processing unit 740S includes second encoding/compression unit 741S and second decoding/decompression unit 743S.

Teleconference system 700 operates in as follows. Teleconference station 710 is the same as first teleconference station 610F described above. Namely, a first audio/video signal is received, processed and transmitted from teleconference station 710 to satellite 20 the same way that the first audio/video signal was received, processed and transmitted from teleconference station 610F. Also, a downlinked microwave signal is received, processed and output by teleconference station 710 to monitor 770F (or a television or VTR) the same way that the downlinked microwave signal was received, processed and output by teleconference station 610F to monitor 670F.

A second analog audio/video signal from a second camera (not shown) is input to second video demodulation unit 731S. Second video demodulation unit 731S then digitizes and demodulates the second analog audio/video signal and outputs a resulting second digital signal. The second digital signal is then input to second encoding/compression unit 741S of second signal processing unit 740S. Second encoding/compression unit 741S in turn compresses and encodes the second digital signal and outputs a second compressed, encoded signal which is sent via HSD line 516A to DHSD link 714 (which is the same as DHSD link 514 discussed with reference to FIG. 4A) to be transmitted to satellite 20 and downlinked to first teleconference station 710 as described above.

Satellite 20 downlinks a downlink microwave signal with the first encoded, compressed signal modulated thereon to DHSD link 714 which receives and demodulates it and outputs the first compressed, encoded signal to a first demodulated high speed digital (HSD) signal on DHSD line 716B. HSD teleconference station 720 then receives the first HSD signal and eventually outputs an analog RGB signal to second studio monitor 770S or outputs an audio/video signal to a television (not shown) in a manner identical to second two-way digital video processor 645S.

FIG. 8 shows a high speed (128 kbps) teleconference system 800 which includes a first high speed teleconference station 810F and a second high speed teleconference station 810S. First high speed teleconference station 810F has a first interface unit 830F, a first signal decoding/decompressing unit 841F, a first signal encoding/compressing unit 843F, a first signal multiplexer 851F, two first protocol converters 855FA and 855FB, two first satellite modem demodulators 850FA and 850FB, two first microwave transmitter/

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receivers 860FA and 860FB, a first microwave combiner/splitter 863F and a first microwave dish 870F.

Second high speed teleconference station 810S has a second interface unit 830S, a second signal decoding/decompressing unit 841S, a second signal encoding/compressing unit 843S, a second signal multiplexer 851S, two second protocol converters 855SA and 855SB, two second satellite modem demodulators 850SA and 850SB, two second microwave transmitter/receivers 860SA and 860SB, a second microwave combiner/splitter 863S and a second microwave dish 870S.

Teleconference system 800 operates as follows. First high speed teleconference station 810F operates as both a transmitting and receiving station. As a transmitting station, first high speed teleconference station 810F receives a first audio/video signal from a camera (not shown) at first interface unit 830F which digitizes that signal to yield a first digital signal. First signal encoding/compressing unit 843F receives the first digital signal and encodes and compresses it to yield a first compressed encoded signal which is asynchronous. First multiplexer 851F receives the first compressed encoded signal and splits it into first compressed encoded signals A and B which in turn are received by first protocol converters 855FA and 855FB, respectively. First protocol converters 855FA and 855FB output first synchronous signals A and B to first microwave transmitter/receivers 860FA and 860FB, respectively. First microwave transmitter/receivers 860FA and 860FB output modulated microwave signals A and B which are combined by first combiner/splitter 863F and then output to first microwave dish 870F as first modulated microwave signal A/B. First satellite modem demodulators 850FA and 850FB insure that the signals output from first microwave transmitter/receiver 860FA and 860FB are the same as the signals received by second microwave transmitter/receivers 860SA and 860SB, respectively. Second high speed teleconference station 810S operates in an analogous manner when transmitting a second modulated microwave signal A/B to be received by first high speed teleconference station 810S.

As a receiving station, first satellite dish 870F of first high speed teleconference station 810F receives a second modulated microwave signal A/B which are split (since they are travelling right to left in FIG. 8) by first combiner/splitter 863F. First microwave transmitter/receivers 860FA and 860FB receive second modulated microwave signals A and B and demodulate these second modulated microwave signals A and B to yield resulting second synchronous signals A and B, respectively. First protocol converters 855FA and 855FB in turn output second compressed encoded signals A and B which are combined by first multiplexer 851F to yield a second compressed encoded signal. First decoding/decompressing unit 841F decompresses and decodes the second compressed encoded signal and outputs a second digital signal to interface unit 830F which in turn outputs a second audio/video signal which can be viewed on a television (not shown). Second high speed teleconference station 810S operates in an analogous manner when receiving the first modulated microwave signal A/B from first high speed teleconference station 810F.

FIG. 9 shows a high speed teleconference system 900 with a first high speed teleconference station 810F as in FIG. 8 but with a second high speed teleconference station 920 according to another embodiment of the invention. Those elements in FIG. 9 common to FIG. 8 have been given the same reference numbers. For example, first high speed teleconference station 910 is the same as first high speed teleconference station 810F in FIG. 8. HSD teleconference

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station 920 has a second interface unit 830S, a second signal decoding/decompressing unit 841S, a second signal encoding/compressing unit 843S, two second protocol converters 855SA and 855SB and CCIT 261 units 925A and 925B. As can be seen however, HSD teleconference station 920 does not have second satellite modem demodulators 850SA and 850SB, second microwave transmitter/receivers 860SA and 860SB, a second microwave combiner/splitter 863S or a second microwave dish 870S. Instead, HSD teleconference station 920 is coupled to an HSD link 914 similar to HSD links 514 and 714 in FIGS. 4A and 7A, respectively. A line doubler and enhancer 990 can be used to enhance a resulting "soft" picture signal output from second interface unit 990. This signal can be passed on to a multi-scan (high density television capable) monitor (not shown).

HSD teleconference station 920 operates in the same manner as second high speed teleconference station 810S in transmitting second synchronous signals A and B from second protocol converters 855SA and 855SB and in receiving first synchronous signal A and B from first high speed teleconference station 810F. Here, however, CCIT units 925A and 925B each receives a 64 bps HSD signal from HSD link 914. CCIT units 925A and 925B in turn output the first synchronous signals A and B to two second protocol converters 855SA and 855SB, respectively.

#### Hardware Implementation

Various embodiments of the invention have been repeated tested at COMSAT head quarters at 810 L'Enfant Plaza, Washington D.C. using the following equipment.

A DigitalFilm break out box made by SuperMac can be used to break down composite video to component video i.e., RGB signals and consequently can serve as video demodulation units 631F, 631S, 731F and 731S. An Emotia converter can be used to down convert from high frequency computer display domain to analog studio RGB domain and consequently can serve as scan down converters 464, 635F, 635S, 735F and 735S. An NTL encoder takes an RGB computer domain signal and converts to lowest common denominator monitoring and/or recording, i.e., composite video, and consequently can serve as encoding units 633F, 633S, 733F and 733S. Motion J-PEG or AM-PEG compression chips by C-Cubed used with a SuperMac and Macintosh hardware/software package and a 2 Gigabyte dual array hard disk drive provides visually lossless high compression ratios for unmanaged full motion video and consequently can serve as transmit signal processor 440 and receive signal processor 460.

As data enters from the computer domain to the rf communication architecture in the real world, the status of the data must be changed from asynchronous data to synchronous data and the electrical properties of connector pins associated with the transport of the signal must be changed accordingly. Both AM-PEG and J-PEG compression require level translation. However, J-PEG also requires state conversion of data between asynchronous and synchronous conversion, whereas AM-PEG data although asynchronous is easily modified to become synchronous.

Black Box Model ASI-IV Protocol Converter changes asynchronous data terminal equipment (DTE) to communicate over a synchronous communication line. This converter allows asynchronous devices like terminals, PCs, and midrange computers to communicate using synchronous modems or multiplexers and consequently can serve as protocol converter 454T, 454R. RS-232 to V.35 Interface

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Converter by Black Box provides bi-directional conversion of all commonly used V.35 (synchronous world) and RS-232 (asynchronous world) equipment. The unit is designed for use as one port configured as DTE and the other port as DCE and consequently can serve as interface units 430, 830F, 830S, 930F and 930S. Also, Black Box ASI-IV Protocol Converter together with RS-232 to V.35 Interface Converter can serve as signal converters 450T, 855FA, 855FB, 855SA, 855SB, 955FA, 955FB, 955SA and 955SB.

TCS-9700 by Mobile Telesystems, Inc. in its full duplex high speed data configuration can serve as microwave transmitter 460, microwave receiver 470, microwave transmitter/receivers 660F, 660S, 760, 860FA, 860FB, 860SA, 860SB. The TCS-9700 includes a transmit modem for modulating a microwave signal to provide an uplink data stream.

COMSAT owns and operates earth stations for international L-Band based satellite communications and Inmarsat owns and operates a string of satellites circling the earth which provides on demand high speed data channels for registered users. These channels are charged to a user on a time basis much like telephone lines for telephones.

COMSAT and Inmarsat provide a duplex high speed data microwave channel which requires a demodulator to effectuate a handshake and quality control (feedback). A Comstream Model 701 satellite modem completes the duplex architecture by acting as a demodulator and consequently can serve as satellite modems 459, 471, 650F, 650S, 750, 850FA, 850FB, 850SA, 850SB, 950FA, 950FB.

A Compression Labs Inc (CLI) device model Eclipse compresses and decompresses low and medium motion managed video with motion interpolation buffering to give a naturalness to motion and speech indistinguishable from real life and consequently can serve as CCIT units 925A, 925B. This results in a "soft" picture which can be "sharpened" or enhanced by line doubling. National Transcommunications Labs PAL/NTSC to HD TV Converter provides line doubling to create added detail and consequently can serve as line doubling and enhancer 990. The signal output from line doubling and enhancer 990 can be passed on to a multi-scan (high density television capable) monitor.

Null modem 512 swaps wires so that "send" goes to "receive" and "receive" goes to "end" to allow transparent full duplex communications. Any standard null modem can accomplish this. DCU/DTE units 510R, 510T are provided by the telephone company in the region in which patch unit 580 is located.

"Digital Film, Professional Video Editing Studio in a Box" User Manual, SuperMac Technology, Inc., 1992, is incorporated herein by reference. "Macintosh User's Guide, for desktop Macintosh computers", Apple Computer, Inc. 1992, is incorporated herein by reference. "Adobe Premiere, User Guide", Adobe Systems Inc., 1992, is incorporated herein by reference. "ASI-IV", January 1992, IC556A and IC556AE is incorporated herein by reference. "RS-232 V.35 Interface Converter", IC221A-R2, by Black Box Corporation, August 1992, is incorporated herein by reference. Model TCS-9700 Transportable Communications System, Operator's Manual" by Mobile Telesystems, Inc. Document 203890B, Dec. 24th, 1992 is incorporated herein by reference. Chapter 2 of CM701 PSK Digital Modem Operator's Manual", by ComStream is incorporated herein by reference.

FIG. 10A shows a suitcase 1001 having a length L, width W and height H for housing any one of the embodiments described above and FIG. 10B shows suitcase 1001 with an

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opened fabric microwave umbrella dish 1002. In particular, FIG. 10A shows suitcase 1001 having a bottom portion 1004, a lid 1006 and a handle 1008. The length L, width W and height H of suitcase 1001 housing the above embodiments has been made smaller than 25 by 24.5 and 16 inches, respectively. Suitcase 1001 is light enough that a person of average strength can easily carry it by handle 1008. That is, all of the above embodiments can be housed in suitcase 1001 and consequently are portable.

FIG. 10B shows suitcase 1001 with opened umbrella dish 1002. Microwave umbrella dish 1002 has a diameter of about 1.2 meters when opened. FIG. 10B shows umbrella dish 1008 to be slanted at an elevation angle E and ready to transmit and/or receive microwave signals.

Numerous and additional modifications and variations of the present invention are possible in light of the above teachings. It is therefore to be understood that within the scope of the appended claims, the invention may be practiced otherwise as specifically claimed.

What is claimed is:

1. A portable integrated transmission system for use with a satellite communications system to establish a satellite communications up-link, comprising:

a transmit signal interface for transforming an analog signal into a digital signal;

a transmit signal processor for compressing the digital signal; and

a microwave satellite transmitter for generating a microwave signal, for modulating the microwave signal with the compressed digital signal to produce a modulated microwave satellite signal, and for directly transmitting the modulated microwave satellite signal to the satellite in the satellite communications system so as to achieve the satellite communications up-link.

2. The portable integrated transmission system of claim 1, wherein the transmit signal processor comprises a video editor for editing the digital signal.

3. The portable integrated transmission system of claim 1, further comprising a satellite modem coupled to the microwave satellite transmitter.

4. The portable integrated transmission system of claim 1, further comprising a housing for housing the transmit signal interfacier, the transmit signal processor and the microwave satellite transmitter.

5. The portable integrated transmission system of claim 4, further comprising a handle attached to the housing.

6. The portable integrated transmission system of claim 4, wherein the housing comprises a suitcase.

7. The portable integrated transmission system of claim 1, wherein the microwave satellite transmitter comprises:

a microwave generator for generating the microwave signal; and

a microwave antenna for transmitting the modulated microwave signal.

8. The portable integrated transmission system of claim 7, wherein the microwave generator comprises an L-Band microwave generator.

9. The portable integrated transmission system of claim 7, wherein the microwave antenna comprises a satellite dish.

10. The portable integrated transmission system of claim 9, wherein the satellite dish is collapsible.

11. The portable integrated transmission system of claim 1, wherein the transmit signal processor comprises a memory for storing the compressed digital signal.

12. The portable integrated transmission system of claim 1, wherein the transmit signal interface comprises an encoder.

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13. The portable integrated transmission system of claim 1, wherein the transmit signal interface comprises an analog-to-digital converter.

14. A portable integrated receiving system for use with a satellite communications system to establish a satellite communications down-link, comprising:

a microwave satellite receiver for directly receiving, from a satellite in the satellite communications system, a modulated microwave satellite signal which has been modulated with a compressed digital signal, and for demodulating the modulated satellite microwave signal into the compressed digital signal; and  
a received satellite signal processor for decompressing the compressed digital signal.

15. The portable integrated receiving system of claim 14, wherein the received satellite signal processor comprises a video editor for editing the digital signal.

16. The portable integrated receiving system of claim 14, wherein the received satellite signal processor comprises a memory for storing the compressed digital signal.

17. The portable integrated receiving system of claim 14, further comprising a satellite modem coupled to the microwave satellite receiver.

18. The portable integrated receiving system of claim 14, wherein the microwave satellite receiver comprises a microwave antenna for receiving the modulated microwave satellite signal.

19. The portable integrated receiving system of claim 18, wherein the microwave antenna comprises an L-Band microwave antenna.

20. The portable integrated receiving system of claim 18, wherein the microwave antenna comprises a satellite dish.

21. The portable integrated receiving system of claim 20, wherein the satellite dish is collapsible.

22. The portable integrated receiving system of claim 14, further comprising a scan converter coupled to the received satellite signal processor for converting the digital signal into a display signal.

23. The portable integrated receiving system of claim 22, further comprising a monitor coupled to the scan converter for receiving and displaying the display signal.

24. The portable integrated receiving system of claim 22, further comprising a recorder coupled to the scan converter for receiving and recording the display signal.

25. The portable integrated receiving system of claim 14, further comprising a housing for housing the microwave satellite receiver and the received satellite signal processor.

26. The portable integrated receiving system of claim 25, further comprising a handle attached to the housing.

27. The portable integrated receiving system of claim 25, wherein the housing comprises a suitcase.

28. A transmission and receiving system for use with a satellite communications system to establish a satellite communications link, comprising:

a transmit signal interface for transforming an analog signal to a digital signal;

a transmit signal processor coupled to the transmit signal interface for compressing the digital signal;

a microwave satellite transmitter, coupled to the transmit signal processor, for generating a microwave signal, for modulating the microwave signal with the compressed digital signal to produce a first modulated microwave satellite signal, and for directly transmitting the first modulated microwave satellite signal to the satellite communications system;

a microwave satellite receiver for directly receiving, from the satellite communications system, a second modu-

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lated microwave satellite signal that has been encoded with the compressed digital signal, wherein the microwave satellite receiver demodulates the second modulated microwave satellite signal to yield the compressed digital signal; and

a received signal processor coupled to the microwave satellite receiver for decompressing the compressed digital signal.

29. The transmission and receiving system of claim 28, further comprising a satellite transmit modem coupled to the microwave satellite transmitter.

30. The transmission and receiving system of claim 28, wherein the transmit signal processor comprises a video editor for editing the digital signal.

31. The transmission and receiving system of claim 28, wherein the microwave satellite transmitter comprises:

a microwave generator for generating the microwave signal; and

a microwave antenna for transmitting the modulated microwave signal.

32. The transmission and receiving system of claim 31, wherein the microwave generator comprises an L-Band microwave generator.

33. The transmission and receiving system of claim 31, wherein the microwave antenna comprises a satellite dish.

34. The transmission and receiving system of claim 33, wherein the satellite dish is collapsible.

35. The transmission and receiving system of claim 28, further comprising a satellite receive modem coupled to the microwave satellite receiver.

36. The transmission and receiving system of claim 28, further comprising a signal patcher coupled to the microwave satellite transmitter and to the microwave satellite receiver for establishing a channel between the microwave satellite transmitter and the microwave satellite receiver.

37. The transmission and receiving system of claim 28, further comprising a housing for housing the transmit signal interface, the transmit signal processor and the microwave satellite transmitter.

38. A portable integrated digital high-speed data line receiving system for use in a satellite communications system to establish a satellite communications link, comprising:

a high-speed data line coupled to the satellite communications system to receive a compressed digital signal;

a received signal processor for decompressing the compressed digital signal; and

a received signal converter that couples the high-speed data line to the received signal processor.

39. The portable integrated digital high-speed data line receiving system of claim 38, further comprising a housing for housing the received signal processor.

40. The portable integrated digital high-speed data line receiving system of claim 39, further comprising a handle attached to the housing.

41. The portable integrated digital high-speed data line receiving system of claim 39, wherein the housing comprises a suitcase.

42. The portable integrated digital high-speed data line receiving system of claim 38, wherein the received signal converter converts the compressed digital signal to a compressed digital signal adapted to be received by an external device.

43. The portable integrated digital high-speed data line receiving system of claim 42, wherein the received signal converter comprises a synchronous-to-asynchronous inter-

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face converter and converts the compressed digital signal to a compressed asynchronous signal.

44. A transmission and digital receiving system for use with a satellite communications system to establish a satellite communications link, comprising:

- a transmit signal interface for transforming an analog signal into a digital signal;
- a transmit signal processor coupled to the transmit signal interface for compressing the digital signal into a compressed digital signal;
- a microwave satellite transmitter, coupled to the transmit signal processor, for generating a microwave signal, for modulating the microwave signal with the compressed digital signal to produce a modulated microwave signal, and for transmitting the modulated microwave signal via the satellite communications system to a digital high-speed data link; and
- a received signal processor for receiving the compressed digital signal from the digital high-speed data link, and for decompressing the compressed digital signal.

45. A method of transmitting information for use with a satellite communications system to achieve a satellite communications up-link, comprising the steps of:

- compressing a digital signal containing the information;
- generating a microwave signal;
- modulating the microwave signal with the compressed digital signal to produce a modulated microwave satellite signal capable of being up-linked directly to a satellite in the satellite communications system; and
- transmitting the modulated microwave satellite signal directly to a satellite in the satellite communications system, thereby achieving the satellite communications up-link.

46. A method of receiving information via a satellite communications down-link in a satellite communications system, comprising the steps of:

- receiving a modulated microwave satellite signal, which has been modulated with a compressed digital signal, directly from a satellite in the satellite communications system;
- demodulating the modulated microwave satellite signal into the compressed digital signal; and
- decompressing the compressed digital signal.

47. A method of transmitting and receiving information via a satellite communications link in a satellite communications system, comprising the steps of:

- compressing a digital signal containing the information;
- generating a microwave satellite signal;
- modulating the microwave satellite signal with the compressed digital signal to produce a first modulated microwave satellite signal;
- transmitting the first modulated microwave satellite signal directly to a satellite in the satellite communications system;
- receiving a second modulated microwave satellite signal, which has been encoded with the compressed digital signal, directly from a satellite in the satellite communications system;
- demodulating the second modulated microwave satellite signal to yield the compressed digital signal; and
- decompressing the compressed digital signal.

48. A transmission system for use with a satellite communications system, comprising:

- a transmit signal interface for transforming an analog signal into a digital signal;

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a transmit signal processor for compressing the digital signal;

a microwave satellite signal transmitter for generating a microwave satellite signal, for modulating the microwave satellite signal with the compressed digital signal to produce a first modulated microwave satellite signal, and for directly transmitting the first modulated microwave satellite signal to the satellite communications system; and

a satellite receiver and transmitter for receiving the first modulated microwave satellite signal, and for transmitting a corresponding second modulated microwave satellite signal that is encoded with the compressed digital signal, wherein the transmit signal interface, the transmit signal processor, and the microwave satellite transmitter are integrated into a portable system.

49. A portable integrated transmission system for use with a satellite communications system to establish a satellite communications up-link, comprising:

- a transmit signal interface for transforming an analog signal into a digital signal;
- a transmit signal processor for compressing the digital signal;
- a transmit signal converter coupled to the transmit signal processor for converting the compressed digital signal to a compressed digital signal adapted to be transmitted, via a microwave signal, directly to a satellite in the satellite communications system; and
- a microwave satellite transmitter for generating a microwave signal, for modulating the microwave signal with the compressed adapted digital signal to produce a modulated microwave satellite signal, and for directly transmitting the modulated microwave satellite signal to the satellite in the satellite communications system so as to achieve the satellite communications up-link.

50. A portable integrated receiving system for use with a satellite communications system to establish a satellite communications down-link, comprising:

- a microwave satellite receiver for directly receiving, from a satellite in the satellite communications system, a modulated microwave satellite signal which has been modulated with a compressed digital signal, and for demodulating the modulated satellite microwave signal into the compressed digital signal;
- a received signal converter coupled to the microwave satellite receiver for converting the compressed digital signal to a compressed digital signal adapted to be received by an external device; and
- a received satellite signal processor for decompressing the adapted compressed digital signal.

51. A transmission and receiving system for use with a satellite communications system to establish a satellite communications link, comprising:

- a transmit signal interface for transforming an analog signal to a digital signal;
- a transmit signal processor coupled to the transmit signal interface for compressing the digital signal;
- a transmit signal converter coupled to the transmit signal processor for converting the compressed digital signal to a compressed digital signal adapted to be transmitted, via a microwave signal, directly to a satellite in the satellite communications system;
- a microwave satellite transmitter coupled to the transmit signal converter for generating a microwave signal, for modulating the microwave signal with the compressed

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adapted digital signal to produce a first modulated microwave satellite signal, and for directly transmitting the first modulated microwave satellite signal to the satellite communications system;

a microwave satellite receiver for directly receiving, from the satellite communications system, a second modulated microwave satellite signal that has been encoded with the compressed digital signal, wherein the microwave satellite receiver demodulates the second modulated microwave satellite signal to yield the compressed digital signal;

a received signal converter coupled to the microwave satellite receiver for converting the compressed digital signal to a compressed digital signal adapted to be received by an external device; and

a received signal processor coupled to the received signal converter for decompressing the compressed digital signal.

52. A portable integrated digital high-speed data line receiving system for use in a satellite communications system to establish a satellite communications link, comprising:

a received signal converter for receiving a compressed digital signal from a high-speed data line coupled to the satellite communications system, and for converting the compressed digital signal to a compressed digital signal adapted to be received by an external device; and

a received signal processor for decompressing the compressed digital signal adapted to be received by an external device.

53. A transmission and digital receiving system for use with a satellite communications system to establish a satellite communications link, comprising:

a transmit signal interface for transforming an analog signal into a digital signal;

a transmit signal processor coupled to the transmit signal interface for compressing the digital signal into a compressed digital signal;

a transmit signal converter coupled to the transmit signal processor for converting the compressed digital signal to a compressed digital signal adapted to be transmitted, via a microwave signal, directly to a satellite in the satellite communications system;

a microwave satellite transmitter, coupled to the transmit signal processor, for generating a microwave signal, for modulating the microwave signal with the compressed digital signal to produce a modulated microwave signal, and for transmitting the modulated microwave signal via the satellite communications system to a digital high-speed data link;

a received signal converter for receiving the compressed digital signal from the high speed data link, for translating voltage levels of the compressed digital signal, and for converting the compressed digital signal into a compressed digital signal adapted to be received by an external device; and

a received signal processor coupled to the received signal converter for decompressing the compressed digital signal.

54. A method of transmitting information for use with a satellite communications system to achieve a satellite communications up-link, comprising the steps of:

compressing a digital signal containing the information; converting the compressed digital signal to a compressed digital signal adapted to be transmitted, via a micro-

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wave signal, directly to a satellite in the satellite communications system;

generating a microwave signal;

modulating the microwave signal with the compressed adapted digital signal to produce a modulated microwave satellite signal capable of being up-linked directly to a satellite in the satellite communications system; and

transmitting the modulated microwave satellite signal directly to a satellite in the satellite communications system, thereby achieving the satellite communications up-link.

55. A method of receiving information via a satellite communications down-link in a satellite communications system, comprising the steps of:

receiving a modulated microwave satellite signal, which has been modulated with a compressed digital signal, directly from a satellite in the satellite communications system;

demodulating the modulated microwave satellite signal into the compressed digital signal;

converting the compressed digital signal into a compressed digital signal adapted to be received by an external device; and

decompressing the compressed adapted digital signal.

56. A method of transmitting and receiving information via a satellite communications link in a satellite communications system, comprising the steps of:

compressing a digital signal containing the information; converting the compressed digital signal to a compressed digital signal adapted to be transmitted, via a microwave signal, directly to a satellite in the satellite communications system;

generating a microwave satellite signal;

modulating the microwave satellite signal with the compressed adapted digital signal to produce a first modulated microwave satellite signal;

transmitting the first modulated microwave satellite signal directly to a satellite in the satellite communications system;

receiving a second modulated microwave satellite signal, which has been encoded with the compressed digital signal, directly from a satellite in the satellite communications system;

demodulating the second modulated microwave satellite signal to yield the compressed digital signal;

converting the compressed digital signal into a compressed digital signal adapted to be received by an external device; and

decompressing the compressed digital signal.

57. A transmission system for use with a satellite communications system, comprising:

a transmit signal interface for transforming an analog signal into a digital signal;

a transmit signal processor for compressing the digital signal;

a transmit signal converter for converting the compressed digital signal to a compressed digital signal adapted to be transmitted, via a microwave signal, directly to a satellite in the satellite communications system;

a microwave satellite signal transmitter for generating a microwave satellite signal, for modulating the microwave satellite signal with the compressed digital signal

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to produce a first modulated microwave satellite signal,  
and for directly transmitting the first modulated micro-  
wave satellite signal to the satellite communications  
system; and  
a satellite receiver and transmitter for receiving the first 5  
modulated microwave satellite signal, and for transmit-  
ting a corresponding second modulated microwave

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satellite signal that is encoded with the compressed  
digital signal, wherein the transmit signal interface, the  
transmit signal processor, the transmit signal converter,  
and the microwave satellite transmitter are integrated  
into a portable system.

\* \* \* \* \*

JS 44 (Rev. 12/07) (and rev 1-16-08)

## CIVIL COVER SHEET

The JS 44 civil cover sheet and the information contained herein neither replace nor supplement the filing and service of pleadings or other papers as required by law, except as provided by local rules of court. This form, approved by the Judicial Conference of the United States in September 1974, is required for the use of the Clerk of Court for the purpose of initiating the civil docket sheet. (SEE INSTRUCTIONS ON PAGE TWO OF THE FORM.)

<b>I. (a) PLAINTIFFS</b> Trans Video Electronics, Ltd.		<b>DEFENDANTS</b> XM Satellite Radio Holdings, Inc. XM Satellite Radio, Inc.	
<b>(b) County of Residence of First Listed Plaintiff</b> (EXCEPT IN U.S. PLAINTIFF CASES) Washington, DC		County of Residence of First Listed Defendant Washington, DC (IN U.S. PLAINTIFF CASES ONLY) NOTE: IN LAND CONDEMNATION CASES, USE THE LOCATION OF THE LAND INVOLVED.	
<b>(c) Attorney's (Firm Name, Address, and Telephone Number)</b> Morgan & Finnegan, L.L.P. 44 Montgomery St., Suite 2550 San Francisco, CA 94104 (415) 318-8800		Attorneys (If Known) <div style="text-align: center;"> <div>HRL</div> <div>E-filing</div> <div>ADR</div> </div>	

<b>II. BASIS OF JURISDICTION</b> (Place an "X" in One Box Only)		<b>III. CITIZENSHIP OF PRINCIPAL PARTIES</b> (Place an "X" in One Box for Plaintiff and One Box for Defendant)			
<input type="checkbox"/> 1 U.S. Government Plaintiff	<input checked="" type="checkbox"/> 3 Federal Question (U.S. Government Not a Party)	Citizen of This State	<input type="checkbox"/> 1 PTF	<input type="checkbox"/> 1 DEF	Incorporated or Principal Place of Business in This State
<input type="checkbox"/> 2 U.S. Government Defendant	<input type="checkbox"/> 4 Diversity (Indicate Citizenship of Parties in Item III)	Citizen of Another State	<input type="checkbox"/> 2 PTF	<input type="checkbox"/> 2 DEF	Incorporated and Principal Place of Business in Another State
		Citizen or Subject of a Foreign Country	<input type="checkbox"/> 3 PTF	<input type="checkbox"/> 3 DEF	Foreign Nation

IV. NATURE OF SUIT (Place an "X" in One Box Only)		FORFEITURE/PENALTY		BANKRUPTCY		OTHER STATUTES	
<b>CONTRACT</b> <input type="checkbox"/> 110 Insurance <input type="checkbox"/> 120 Marine <input type="checkbox"/> 130 Miller Act <input type="checkbox"/> 140 Negotiable Instrument <input type="checkbox"/> 150 Recovery of Overpayment & Enforcement of Judgment <input type="checkbox"/> 151 Medicare Act <input type="checkbox"/> 152 Recovery of Defaulted Student Loans (Excl. Veterans) <input type="checkbox"/> 153 Recovery of Overpayment of Veteran's Benefits <input type="checkbox"/> 160 Stockholders' Suits <input type="checkbox"/> 190 Other Contract <input type="checkbox"/> 195 Contract Product Liability <input type="checkbox"/> 196 Franchise	<b>PERSONAL INJURY</b> <input type="checkbox"/> 310 Airplane <input type="checkbox"/> 315 Airplane Product Liability <input type="checkbox"/> 320 Assault, Libel & Slander <input type="checkbox"/> 330 Federal Employers' Liability <input type="checkbox"/> 340 Marine <input type="checkbox"/> 345 Marine Product Liability <input type="checkbox"/> 350 Motor Vehicle <input type="checkbox"/> 355 Motor Vehicle Product Liability <input type="checkbox"/> 360 Other Personal Injury	<b>PERSONAL INJURY</b> <input type="checkbox"/> 362 Personal Injury—Med. Malpractice <input type="checkbox"/> 365 Personal Injury—Product Liability <input type="checkbox"/> 368 Asbestos Personal Injury Product Liability <b>PERSONAL PROPERTY</b> <input type="checkbox"/> 370 Other Fraud <input type="checkbox"/> 371 Truth in Lending <input type="checkbox"/> 380 Other Personal Property Damage <input type="checkbox"/> 385 Property Damage Product Liability	<input type="checkbox"/> 610 Agriculture <input type="checkbox"/> 620 Other Food & Drug <input type="checkbox"/> 625 Drug Related Seizure of Property 21 USC 881 <input type="checkbox"/> 630 Liquor Laws <input type="checkbox"/> 640 R.R. & Truck <input type="checkbox"/> 650 Airline Regs. <input type="checkbox"/> 660 Occupational Safety/Health <input type="checkbox"/> 690 Other	<input type="checkbox"/> 422 Appeal 28 USC 158 <input type="checkbox"/> 423 Withdrawal 28 USC 157 <b>PROPERTY RIGHTS</b> <input type="checkbox"/> 820 Copyrights <input checked="" type="checkbox"/> 830 Patent <input type="checkbox"/> 840 Trademark	<input type="checkbox"/> 400 State Reapportionment <input type="checkbox"/> 410 Antitrust <input type="checkbox"/> 430 Banks and Banking <input type="checkbox"/> 450 Commerce <input type="checkbox"/> 460 Deportation <input type="checkbox"/> 470 Racketeer Influenced and Corrupt Organizations <input type="checkbox"/> 480 Consumer Credit <input type="checkbox"/> 490 Cable/Sat TV <input type="checkbox"/> 810 Selective Service <input type="checkbox"/> 850 Securities/Commodities/Exchange <input type="checkbox"/> 875 Customer Challenge 12 USC 3410 <input type="checkbox"/> 890 Other Statutory Actions <input type="checkbox"/> 891 Agricultural Acts <input type="checkbox"/> 892 Economic Stabilization Act <input type="checkbox"/> 893 Environmental Matters <input type="checkbox"/> 894 Energy Allocation Act <input type="checkbox"/> 895 Freedom of Information Act <input type="checkbox"/> 900 Appeal of Fee Determination Under Equal Access to Justice <input type="checkbox"/> 950 Constitutionality of State Statutes	<b>REAL PROPERTY</b> <input type="checkbox"/> 210 Land Condemnation <input type="checkbox"/> 220 Foreclosure <input type="checkbox"/> 230 Rent Lease & Ejectment <input type="checkbox"/> 240 Torts to Land <input type="checkbox"/> 245 Tort Product Liability <input type="checkbox"/> 290 All Other Real Property	<b>CIVIL RIGHTS</b> <input type="checkbox"/> 441 Voting <input type="checkbox"/> 442 Employment <input type="checkbox"/> 443 Housing/Accommodations <input type="checkbox"/> 444 Welfare <input type="checkbox"/> 445 Amer. w/Disabilities - Employment <input type="checkbox"/> 446 Amer. w/Disabilities - Other <input type="checkbox"/> 440 Other Civil Rights
		<b>PRISONER PETITIONS</b> <input type="checkbox"/> 510 Motions to Vacate Sentence <b>Habeas Corpus:</b> <input type="checkbox"/> 530 General <input type="checkbox"/> 535 Death Penalty <input type="checkbox"/> 540 Mandamus & Other <input type="checkbox"/> 550 Civil Rights <input type="checkbox"/> 555 Prison Condition	<b>LABOR</b> <input type="checkbox"/> 710 Fair Labor Standards Act <input type="checkbox"/> 720 Labor/Mgmt. Relations <input type="checkbox"/> 730 Labor/Mgmt. Reporting & Disclosure Act <input type="checkbox"/> 740 Railway Labor Act <input type="checkbox"/> 790 Other Labor Litigation <input type="checkbox"/> 791 Empl. Ret. Inc. Security Act	<b>SOCIAL SECURITY</b> <input type="checkbox"/> 861 HIA (1395ff) <input type="checkbox"/> 862 Black Lung (923) <input type="checkbox"/> 863 DIWC/DIWW (405(g)) <input type="checkbox"/> 864 SSID Title XVI <input type="checkbox"/> 865 RSI (405(g))			
		<b>IMMIGRATION</b> <input type="checkbox"/> 462 Naturalization Application <input type="checkbox"/> 463 Habeas Corpus - Alien Detainee <input type="checkbox"/> 465 Other Immigration Actions	<b>FEDERAL TAX SUITS</b> <input type="checkbox"/> 870 Taxes (U.S. Plaintiff or Defendant) <input type="checkbox"/> 871 IRS—Third Party 26 USC 7609				

<b>V. ORIGIN</b> (Place an "X" in One Box Only)		Transferred from		Appeal to District	
<input checked="" type="checkbox"/> 1 Original Proceeding	<input type="checkbox"/> 2 Removed from State Court	<input type="checkbox"/> 3 Remanded from Appellate Court	<input type="checkbox"/> 4 Reinstated or Reopened	<input type="checkbox"/> 5 another district (specify)	<input type="checkbox"/> 6 Multidistrict Litigation <input type="checkbox"/> 7 Judge from Magistrate Judgment

<b>VI. CAUSE OF ACTION</b>	Cite the U.S. Civil Statute under which you are filing (Do not cite jurisdictional statutes unless diversity): 35 U.S.C. § 100 et. seq. Brief description of cause: Infringement of U.S. Patent No. 5,903,621
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<b>VII. REQUESTED IN COMPLAINT:</b>	<input type="checkbox"/> CHECK IF THIS IS A CLASS ACTION DEMAND \$	CHECK YES only if demanded in complaint: JURY DEMAND: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
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<b>VIII. RELATED CASE(S) IF ANY</b>	PLEASE REFER TO CIVIL L.R. 3-12 CONCERNING REQUIREMENT TO FILE "NOTICE OF RELATED CASE". TransVideo Electronics v. Serius Satellite
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<b>IX. DIVISIONAL ASSIGNMENT (CIVIL L.R. 3-2) (PLACE AND "X" IN ONE BOX ONLY)</b>	<input checked="" type="checkbox"/> SAN FRANCISCO/OAKLAND	<input type="checkbox"/> SAN JOSE
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DATE April 17, 2008	SIGNATURE OF ATTORNEY OF RECORD 
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